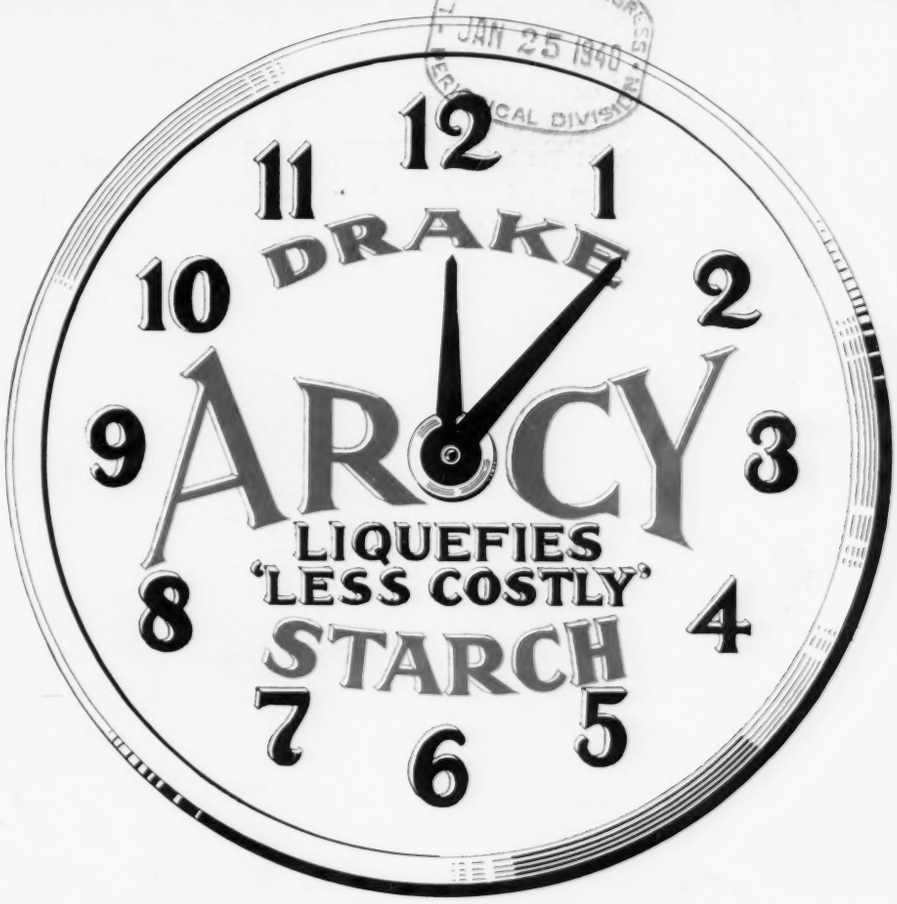
COTTON

JANUARY, SERVING THE 1940

Textile Industries

JAN 25 1940



NOW IS THE TIME!

With every mill striving, by modernization of equipment and methods, to lower production costs and increase efficiency, there could be NO BETTER TIME to take advantage of the opportunities offered to reduce warp sizing costs and with superior results.

DRAKE CORPORATION

NORFOLK, VIRGINIA

TS1550
.C8

When You Install . . .

Condor Compensated

PATENTED
TRADE MARK REGISTERED

The Belt With Equalized Ply Stresses

You Make an Investment that Compounds Itself Twelve* Ways

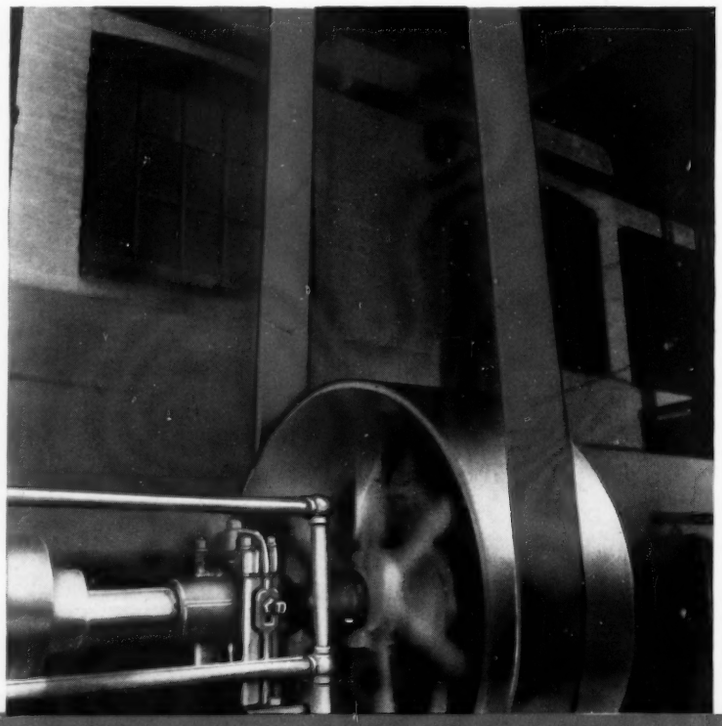
IF you read the list of twelve* advantages below, you'll see how each one contributes to longer and more economical service, compounding the return to the user.

But this is actually only a partial list of all the benefits, because it indicates only by inference that power is delivered with remarkable efficiency from driving pulley to driven pulley, that Condor Compensated because of its two fundamentals—equalized plies and low-tension surface—grips the pulley throughout the entire arc of contact. The bottom ply, the middle plies and the outer ply are all in uniform and virtually equal tension.

This is the power-delivering property that distinguishes Condor Compensated and that is more fully described in Bulletin 6808-C—well worth writing for—and now, before it slips your mind and delays closer acquaintance with Condor Compensated's services of saving in twelve* ways.

*12 ADVANTAGES

1. Ruptures in outside ply eliminated.
2. Freedom from ply separation.
3. Longer fastener life.
4. Can be operated on smaller pulleys.
5. Less bearing, shafting and hanger troubles.
6. For heavy loads, plies may be increased with same pulleys.
7. Operation less affected by atmospheric conditions.
8. Higher overload capacity or margin of safety.
9. Less wear on pulley side.
10. Can be dressed without injury to belt.
11. High production efficiency.
12. Material reduction in belting costs.



Condor PRODUCTS

Conveyor and Elevator Belt
Transmission Belt
V-Belt
Air Hose
Contractors Hose
Fire Hose
Hydraulic Hose
Oil and Gasoline Hose
Sand Blast Hose
Steam Hose
Suction Hose
Water Hose
Chute Lining
Launder Lining
Industrial Brake Blocks and Lining
Molded Rubber Goods
Rubber Lined Tanks
Rubber Covered Rolls

Abrasive Wheels
Bowling Balls

THE MANHATTAN RUBBER MFG. DIVISION
OF RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES AND FACTORIES
23 Townsend St., Passaic, N. J.

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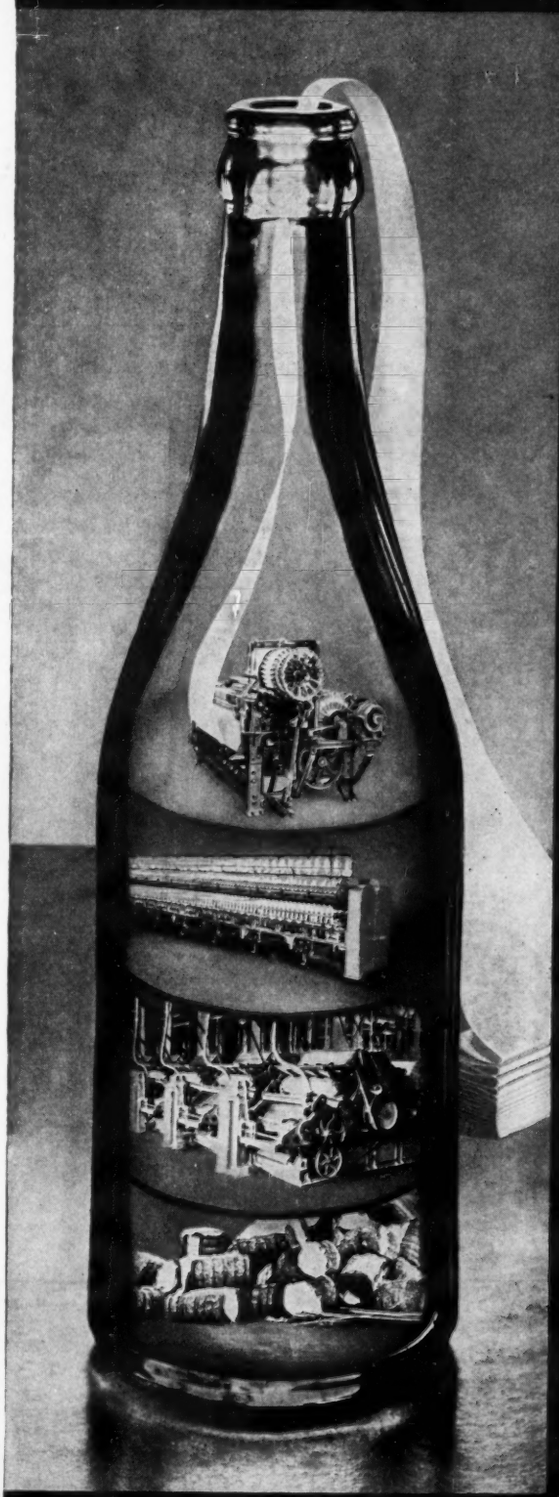
4630
6333 D

The Bottleneck of Your Mill is the Loom



It Gauges Your Output

You Can Get
No More Cloth
No Better Cloth
Than
Your Looms Produce

Good Machines are Necessary in Every Room in the Modern Mill
Good Yarns Enable You to Get Full Benefit of Modern Looms

But Your LOOMS
Are Your Bread-Winners

They Measure Output and Fix its Quality
They Must be Good Looms and to be Good Looms They Must be High Speed Looms

X Family High Speed Looms
Are the Looms for Profit
For All One-Shuttle Weaves

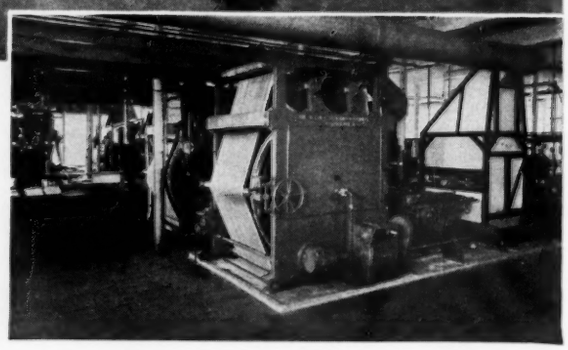
X XK XL for Cottons
XK and XD for Rayons

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

BIG BLEACHERY

Smooths operations



THIS up-to-the-minute bleachery is one of the smoothest operating plants in its section of the South . . . Greenville, S. C.

Each year for 8 years they have lubricated more and more equipment with Texaco . . . until today practically all machinery is Texaco lubricated, evidence of increasing satisfaction.

All anti-friction bearings in this big plant are effectively protected by Texaco Starfak, the famous lubricant for high speed ball and roller bearings.

You, too, are offered improved lubrication results. Texaco engineers will gladly cooperate to this end. To get this service, phone the nearest of 2279 warehouses, or write:
The Texas Company, 135 E. 42nd St., New York, N. Y.

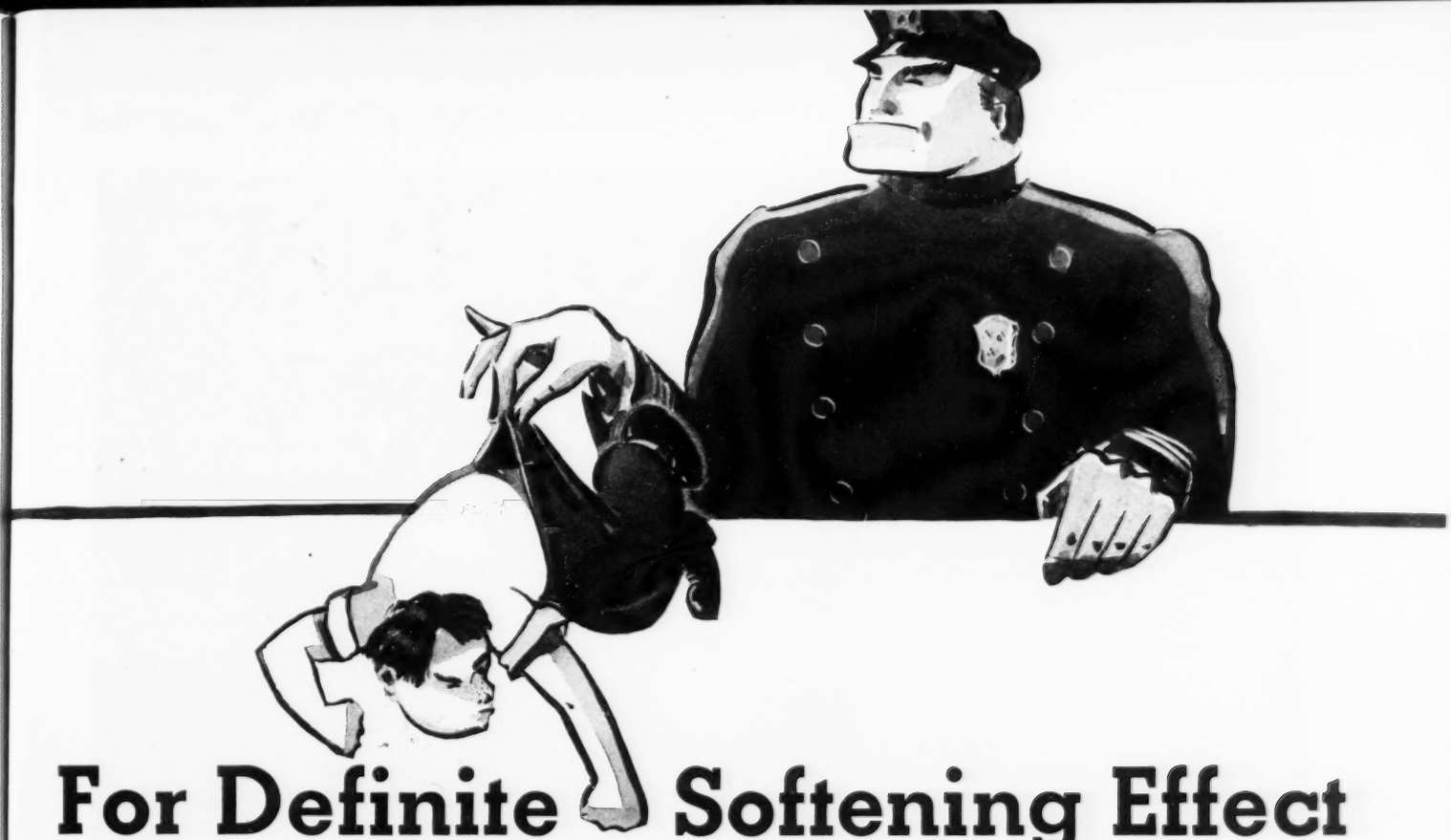
SANFORIZERS in the Union Bleachery are all Texaco Starfak Lubricated. Texaco is used throughout the plant.

Texaco Dealers invite you to tune in The Texaco Star Theatre —a full hour of all-star entertainment—Every Wednesday Night—Columbia Network—9:00 E.S.T., 8:00 C.S.T., 7:00 M.S.T., 6:00 P.S.T.

TEXACO STARFAK

TEXACO'S RECENT CONTRIBUTION TO MORE EFFECTIVE LOOM LUBRICATION. STAZON REDUCES SPOILAGE BY RESISTING DRIPPING AND SPATTERING. STAZON STAYS ON.

TEXACO STAZON



For Definite Softening Effect . . . . . WARNER TSPP

Outstanding property of TSPP as a water softener is its ability to inhibit precipitation of calcium, magnesium and iron compounds in water up to 5-grain hardness. Even *in harder* waters the tendency of the precipitated and suspended substances to adhere to textile fibers is markedly reduced by the addition of TSPP to the solution. Many mills have replaced as much as 50% of more expensive water softening compounds with TSPP.

Warner pioneered the production of phosphates in America 54 years ago, had pilot plant production of TSPP almost 10 years ago and was making carload shipments 5 years ago. Today, Warner has not only adequate production capacity but also a solid background of technical experience in the use of TSPP.

Your inquiry will have immediate attention.

OTHER WARNER CHEMICALS

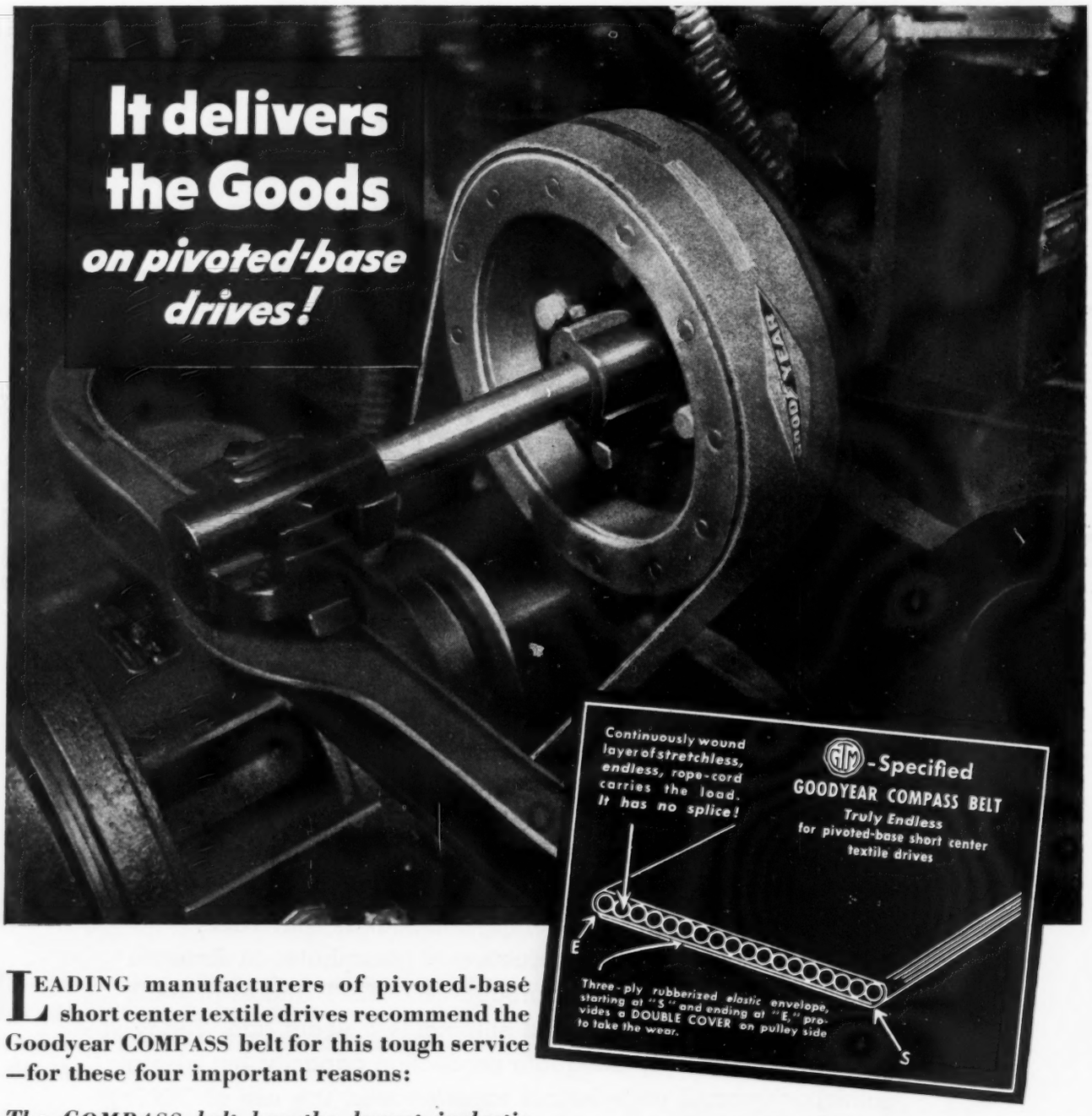
Tetra Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
(mono, di-and tri basic)
Liquid Caustic Potash
Chlorine, Liquid
Carbon Tetrachloride
Trichlorethylene
Carbon Bisulfide
Sodium Sulfide
Epsom Salt
Hydrogen Peroxide

WARNER

CHEMICAL COMPANY ☆ DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.


It delivers the Goods
on pivoted-base drives!
Continuously wound layer of stretchless, endless, rope-cord carries the load. It has no splice!
GM-Specified
GOODYEAR COMPASS BELT
Truly Endless
for pivoted-base short center textile drives
E
Three-ply rubberized elastic envelope, starting at "S" and ending at "E," provides a DOUBLE COVER on pulley side to take the wear.
S

LEADING manufacturers of pivoted-base short center textile drives recommend the Goodyear COMPASS belt for this tough service —for these four important reasons:

The COMPASS belt has the lowest inelastic stretch of any belt made, insuring a constant relationship between pivot point and belt strands.

It is truly endless; has no splice to fail from the constant strain of flexing around short centers.

It has extremely high flex-life because the load-carrying element is built in one plane. There are no plies to separate; no inter-planer distortion.

The patented COMPASS balanced construction insures true running, keeps the belt from "traveling" off the pulleys.

These exclusive features explain the remarkably long service this mill-proved belt is giving on these difficult drives. Let the G. T. M. —Goodyear Technical Man—give you the full story. To bring him to your mill, write Goodyear, Akron, Ohio, or Los Angeles, California — or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

THE GREATEST NAME IN RUBBER

GOODYEAR

BELTS
MOLDED GOODS
HOSE
PACKING
Made by the makers of Goodyear Tires

Compass—T. M. The Goodyear Tire & Rubber Company

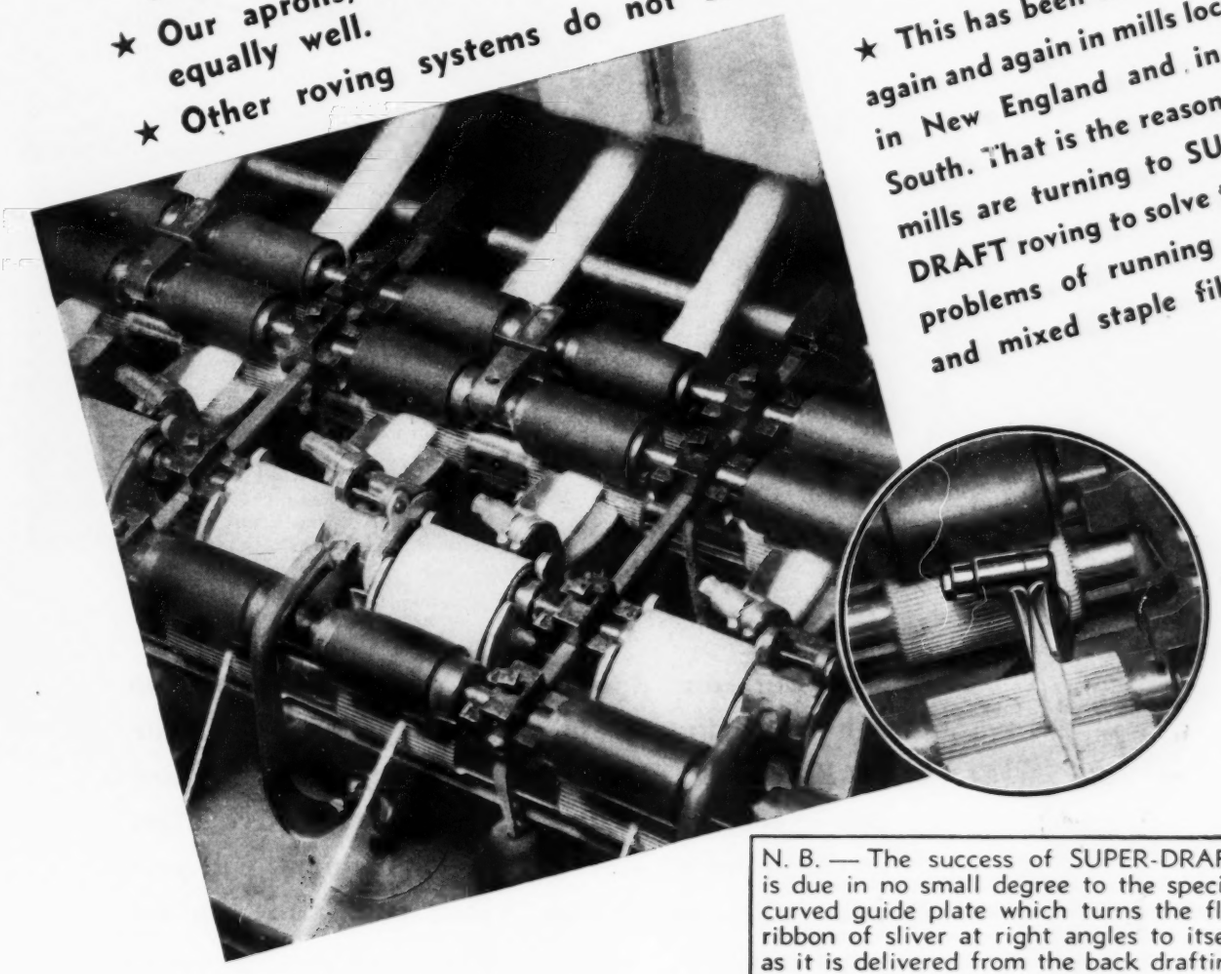
WHY IS SUPER-DRAFT THE ONLY SINGLE PROCESS ROVING SYSTEM ON WHICH MIXED FIBERS OF DIFFERENT LENGTHS CAN BE SUCCESSFULLY RUN ON COTTON MACHINERY?

★ It is the only system of roving that can control VARYING LENGTHS and VARIOUS TYPES of staples.

★ Our aprons, with their pressure on the fibers, CONTROL BOTH equally well.

★ Other roving systems do not control MIXED staples.

★ This has been demonstrated again and again in mills located in New England and in the South. That is the reason why mills are turning to SUPER-DRAFT roving to solve their problems of running cut and mixed staple fibers.



N. B. — The success of SUPER-DRAFT is due in no small degree to the special curved guide plate which turns the flat ribbon of sliver at right angles to itself as it is delivered from the back drafting section, narrowing and condensing it just prior to entry into the bite of the back line of rolls on the front section.

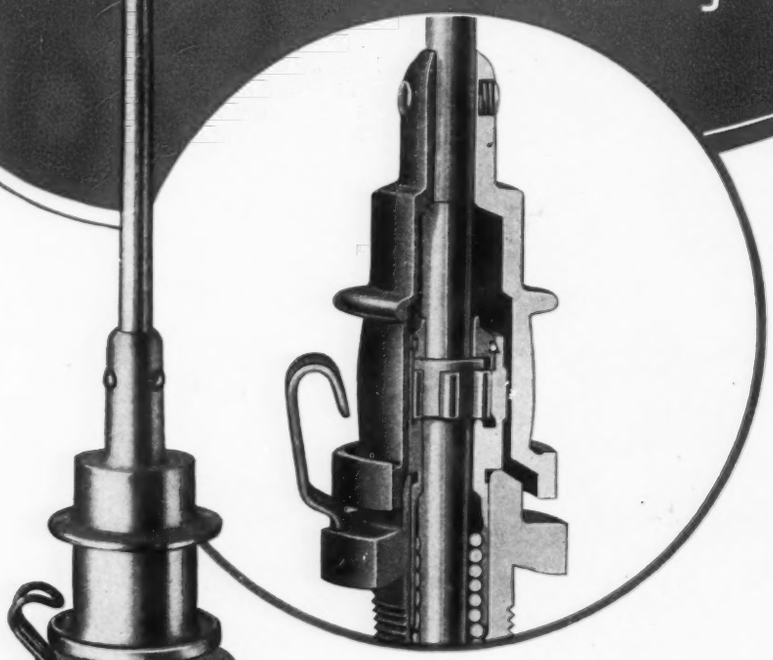
N. B #2 — No other device brought out for the purpose has ever proven so effective.

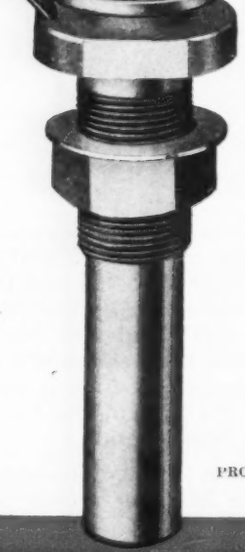
WHITIN MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS, U. S. A.

CHARLOTTE, N. C. ATLANTA, GA.

Get HIGHER SPEEDS *and* LOWER COSTS *with* MARQUETTE NOVIBRA Roller Bearing Spindles





• Rollers are electro-mechanically checked to .00005 in. The retainer is made of self-lubricating special alloy bronze. Roller bearing body and outer race (one-piece) are made of special alloy steel. Just above the rollers you can see the roller bearing cover, with collar that keeps out dust and fly.

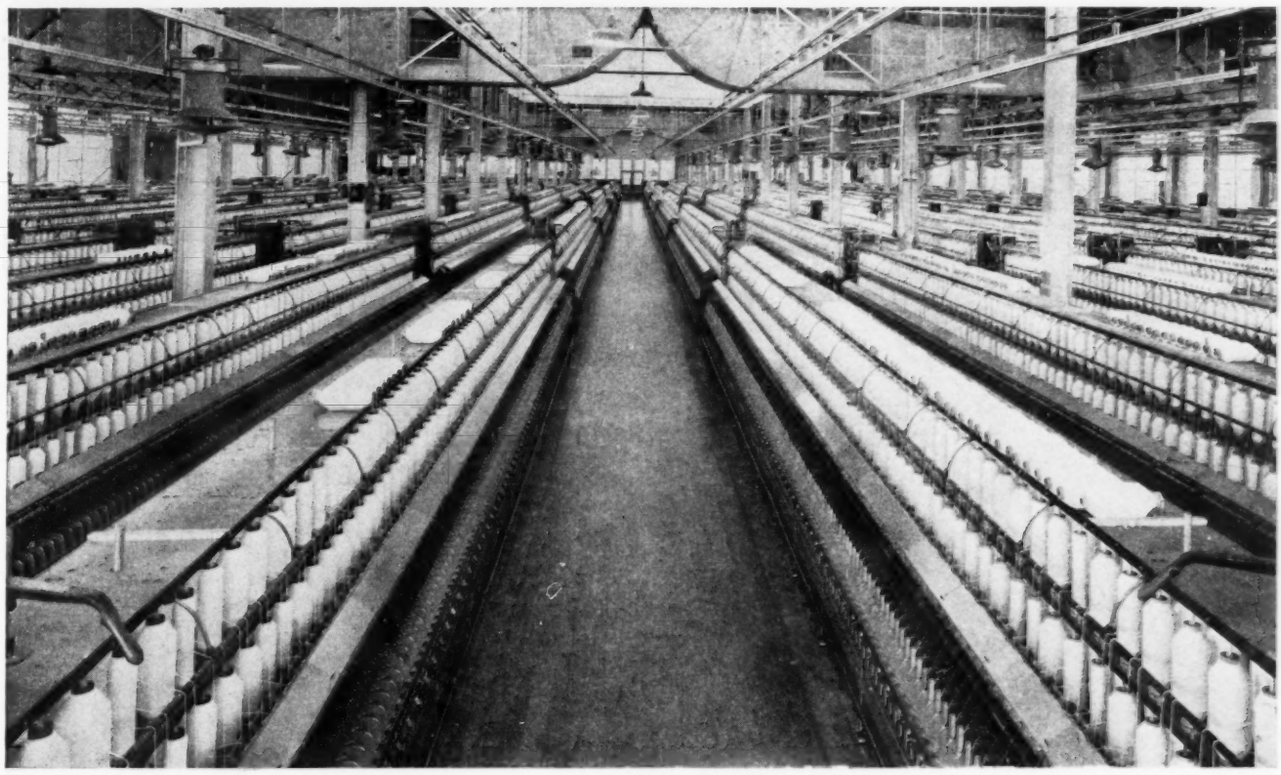
The superior design and construction of the roller bearing assembly is the chief reason for MARQUETTE NOVIBRA'S high speeds and low power costs. It will operate satisfactorily as fast as the spinning and twisting machinery will permit, with minimum vibration and highest efficiency.

PROTECTED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2168247, 2168248, 2168249

MARQUETTE TEXTILE SPINDLES NOVIBRA

THE MARQUETTE METAL PRODUCTS CO.
1170 GALEWOOD DRIVE . . . . . CLEVELAND, OHIO
Byrd Miller, 108 Woodside Bldg., Greenville, S. C. . . . Stanley Morton, 25 West Durrance St., Kingston, Pa.

Here *Comfort* and *Economy* Walk Hand-in-Hand ON FLOORS OF NORTHERN HARD MAPLE



The Matheus Cotton Mill, Greensboro, S. C., floored with Northern Hard Maple

You cut costs "from the ground up" with Hard Maple —and it's easy to see why.

Watch workers—they show fatigue less quickly on resilient Maple, while its warm dry comfort and sanitation guards their health.

Watch machinery—Hard Maple creates no dust injurious to bearing surfaces.

Watch traffic—Both trucks and men move faster with less effort on this smooth-surfaced floor.

Watch monthly costs—for cleaning and for maintenance. Brushing alone keeps Maple clean — lint brushes up easily, doesn't catch. And Hard Maple wears smooth, does not sliver or splinter even under the wear of heavy, steel-castered trucks. Too, Hard Maple simplifies alterations, machinery shifting and renewal.

Watch wear—This flooring's famous for its long wear—its low cost per year of service.

Add these reasons and it's easy to see why scores of textile mills use nothing but Northern Hard Maple —and, like the Mathews Cotton Mill above, find it *most satisfactory in every way.*

For Hard Maple at its finest, they make sure of *Northern* Hard Maple, by specifying trademarked **MFMA*** Flooring, in strips or blocks. *Ask your architect.*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

• • •

See our catalog data in Sweet's, Sec. 11/78.

Write for leaflet on heavy-duty finishes for old or new floors.

* *The* **MFMA** *trademark, indented and stamped on Maple flooring, guarantees it to be* GENUINE *Northern Hard Maple, graded and* **MFMA** *supervised in accordance with the Association's exacting standards.*

Floor *with* MFMA Maple

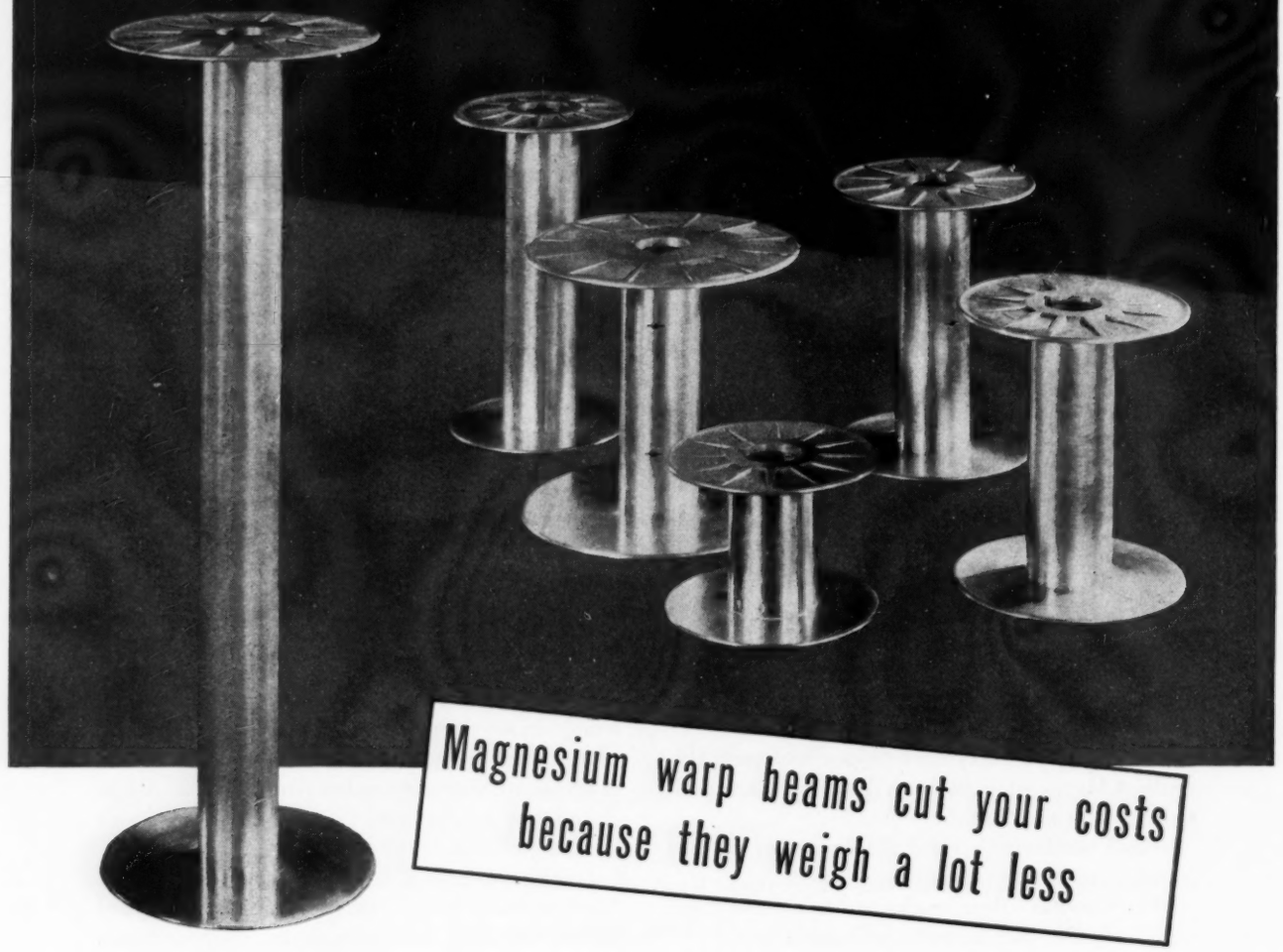
REG. U. S. PAT. OFF

(NORTHERN HARD)

MAZLO
Reg.U.S.Pat.Off.

MAGNESIUM ALLOYS

THE LAST WORD IN LIGHTNESS



Magnesium warp beams cut your costs because they weigh a lot less

These warp beams are very light in weight. They're made of MAZLO Magnesium, which weighs only one-fourth as much as iron; cast Magnesium flanges are welded to extruded Magnesium tubing. Thousands of these warp beams are in service, proving Magnesium's ability to "take it."

Think what this lighter weight will do for your shipping and handling costs! There's that much less deadweight on which to pay transportation costs. Less fatigue for men who must handle them; improved machine operation.

The high strength, rigidity and design of MAZLO Magnesium warp beams enable them to meet every requirement for perfect performance in your mill. They are made in 10, 11 and 14-inch flange diameters, and in lengths from 6 to 42 inches. We'll gladly send you further data and prices. *Sales Agent:* Aluminum Company of America, 1939 Gulf Bldg., Pittsburgh, Pa.

MAZLO

AMERICAN MAGNESIUM CORPORATION

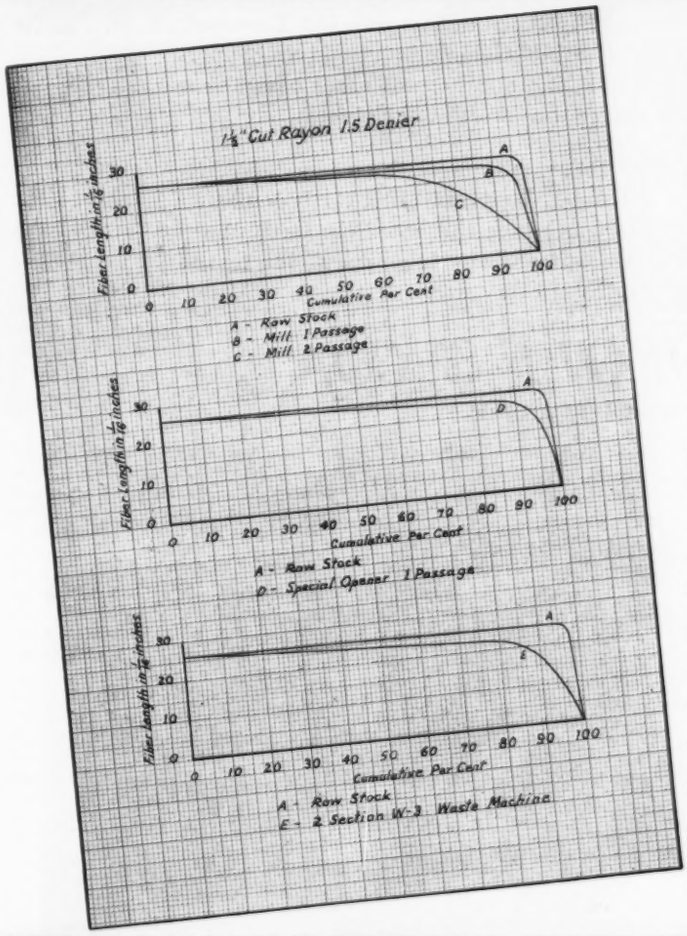
TODAY

PRODUCTION OF STAPLE FIBRE WILL REACH 65,000,000 POUNDS IN 1939 . . .

DEMANDS CONTINUE TO GROW

SACO-LOWELL

Ready today for the Needs of Tomorrow


1½" Cut Rayon 1.5 Denier
Fiber Length in 64ths inches
Cumulative Per Cent
A - Raw Stock
B - Mill 1 Passage
C - Mill 2 Passage
A - Raw Stock
D - Special Opener 1 Passage
A - Raw Stock
E - 2 Section W-3 Waste Machine

THE TREMENDOUS STRIDES which have been made in the development and use of spun rayon and other synthetic fibres present a challenge to the mill of today.

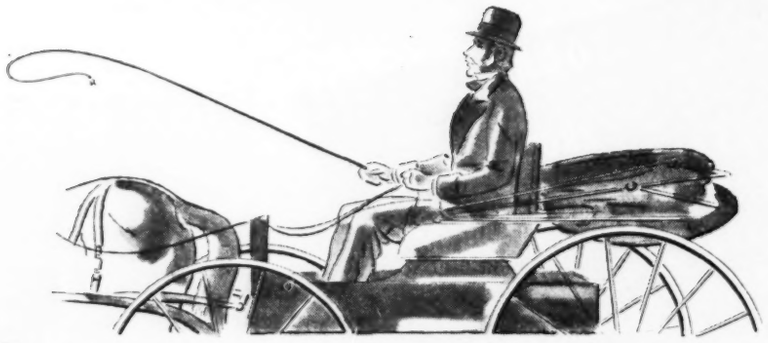
The overwhelming acceptance of this material points to an even greater demand tomorrow—a demand which the mill of today must be prepared to meet.

To meet this demand Saco-Lowell has prepared special equipment in opening and picking, carding and spinning . . . equipment which embodies the latest results of an extensive research in the spinning characteristics of these synthetic fibres, not only when used alone, but when blended with cotton and other synthetics.

To mills interested in expanding their operations in this new field we offer this new equipment with every confidence in its ability to perform effectively.

DIAGRAMS OF . . .
1½" - - 1.50 Denier Staple Fibre showing Staple Change resulting from Processing.

SACO-LOWELL SHOPS 60 Batterymarch Street, Boston, Mass.
Charlotte, N. C. Greenville, S. C. Atlanta, Ga.



It's a Long Way from a Buggy-whip Factory

In 1901, the basement of an old whip factory in Passaic, New Jersey, was advertised "FOR RENT." That year, a young chemist moved in, started to make chemical specialties for a few nearby textile mills.

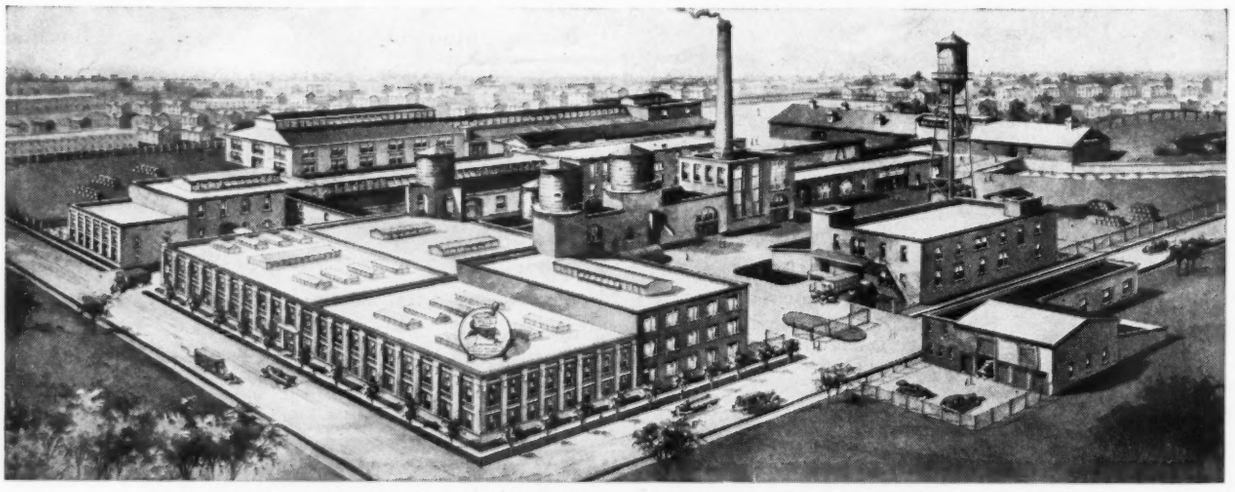
The little chemical plant grew up with the fast-developing silk dyeing industry of Paterson, met the chemical needs of Passaic and New England mills.

Outgrowing the buggy-whip factory, Jacques Wolf and Company moved to its present site, set up extensive research laboratories. Keeping pace with changes in styles, finishes and fabrics, they were *first* to introduce hydrosulphites, replacing imported chemicals and dyestuffs during the World War...*first* with sulphoxylate solutions that made possible discharge printing...*first* with Monopole Oil, Bensapol, Collodine, Gommeline, Supertex, Superclear, and hundreds of other names that make the "Wolf" line famous.

Today, still under the leadership of its founder, Jacques Wolf & Co. is dedicated to continuing this research. Its facilities are a "company laboratory" for textile mills of every size.

JACQUES WOLF & CO.

PASSAIC, NEW JERSEY



The main Jacques Wolf & Co. plant at Passaic, N. J. (shown above), together with the Carlstadt, N. J., works and warehouses, include 33 buildings . . . covering 11 acres.

WAREHOUSES: Providence, R. I., Utica, N. Y., Philadelphia, Pa., Greenville, S. C., Chattanooga, Tenn., Chicago, Ill. Midwestern Distributor: Bradley F. Marthens, Milwaukee, Wisc.

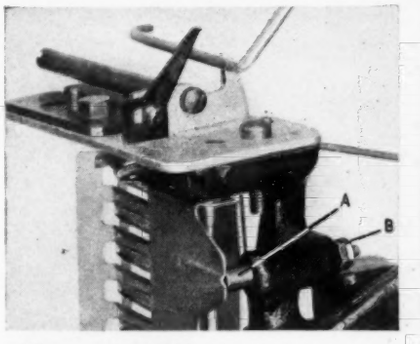
THIS IS NO. 19 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

ANTI-WEAR TENSION ADJUSTMENT (NO. 50 WINDER)

At the back of the Anti-Wear Tension and set very close to the movable grid, is a plunger (A) known as the Tension Closer which is frequently neglected yet if accurately adjusted will improve winding quality.



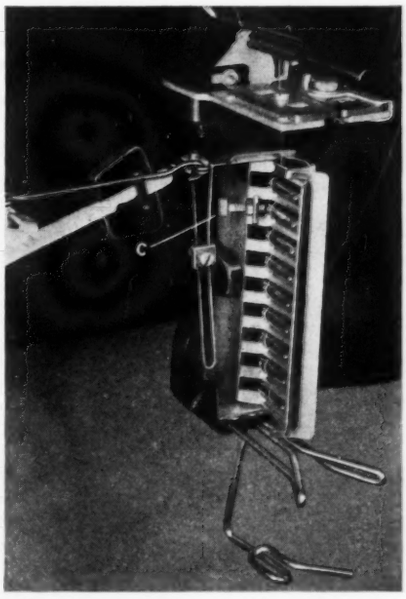
The purpose of this plunger is to prevent any quantity of yarn from passing through to the spindle without tension, which would occur if no provision were made to close the grids after being opened. When the movable grid is opened, for threading-up or for any other reason, the plunger is pushed back into the casting. When the grid is released, a spring behind the plunger closes the grid automatically. If plucks occur while winding, the plunger prevents the grid from opening too far and forces it back.

The Tension Closer is adjusted by means of two check nuts (B) on the far side of the casting. With the yarn running at the start of a package, there should be a .020 inch clearance between the plunger and the plate of the movable grid. The reason for this clearance is to allow the movable grid to open slightly as tension is released by the Differential Tension Lever.

The proper setting of the Tension Closer can be checked when the package on the winding spindle is full. At this point, the movable grid should be close to, but not touching, the plunger.

In the design of the Anti-Wear Tension, provision has also been made for preventing unnecessary end breakage caused by too violent action of the movable grid in closing. Whenever the grids are suddenly opened as the result of plucks or some other interference at the supply, there is a tendency for the movable grid to bound back, which will cause the yarn to wrap around the fingers of the Tension. The Tension Stop (C) serves to keep the movable grid from passing too far through the fingers of the stationary grid.

However, the Tension Stop should not be used to reduce the amount of tension on



the yarn. Some mills do this, particularly when winding the finer counts of yarn, and, as a result, they prevent proper action of the Differential Tension Control.

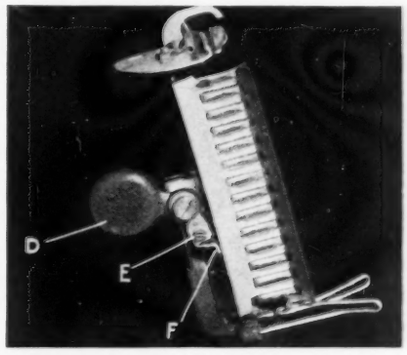
The Tension Stop should be set at the start of winding. With the yarn running, the fixer turns the screw on the Stop until it *almost* touches the finger on the movable grid. It must never touch — for fear of destroying the differential tension feature; if it should touch, the release of tension through the Tension Lever does not take effect until a considerable portion of the package has been wound.

ADJUSTMENT OF FINGER TENSION CLOSER (NO. 50 WINDER)

Using the Finger Tension, the same care must be applied in setting the Tension Closer. The weight (D) serves to close the movable half of the grid after the yarn has been threaded through the Tension. It also prevents the movable half from jumping open while the yarn is running.

The screw (E) just below the stud around which the weight pivots, is adjustable. With the yarn in the tension at the start of winding, the weight is down as far as it will go; this lower screw should now be loosened, which permits the Adjuster (F) to be pressed up *close* to the edge of the movable part of the Finger Tension — but not touching it.

Some mills, desiring to increase the tension on the yarn, mistakenly set the Adjuster to touch the movable finger, so that the weight of the Closer will keep the fingers pushed together. This is not the intention of the design, for it interferes with the proper action of the Differential Tension Lever and makes it impossible to do satisfactory winding.



CHECKING BEAM WEIGHTS AND YARN COUNTS

A weaving mill that has an accurate control of the yardage put on the beam, and of the tension on the yarn, can make a reasonably accurate check on actual yarn count by watching the weights of the beams off the warper.

Some mills keep a chart on a piece of graph paper, on which the beam weights are lined up on the left-hand edge and the corresponding yarn counts on the right-hand edge. These figures are originally worked out on the basis of a table like this:

30/1 400 ends 36,000 yards

Beam Weight (lbs.)	*Actual Yarn Count*
553	31.00
558	30.75
563	30.50
567	30.25
571.4	30.00
576	29.75
581	29.50
586	29.25
591	29.00

Mills running more than one yarn count or a varying yardage on the beams, keep separate charts for each condition.

Allowance can be made for variation in moisture content, and the wet and dry bulb reading at the time each beam is produced, can be recorded on the chart. Many mills follow this procedure in the picker room when weighing laps, and the same thing can be done at the warper. It is especially desirable for a mill operating a high speed system, because a beam can be produced within an hour or two during which time no great change in humidity can take place. With a slow speed system, requiring the better part of a day to produce a beam, there may be enough change in humidity to allow a slight error.

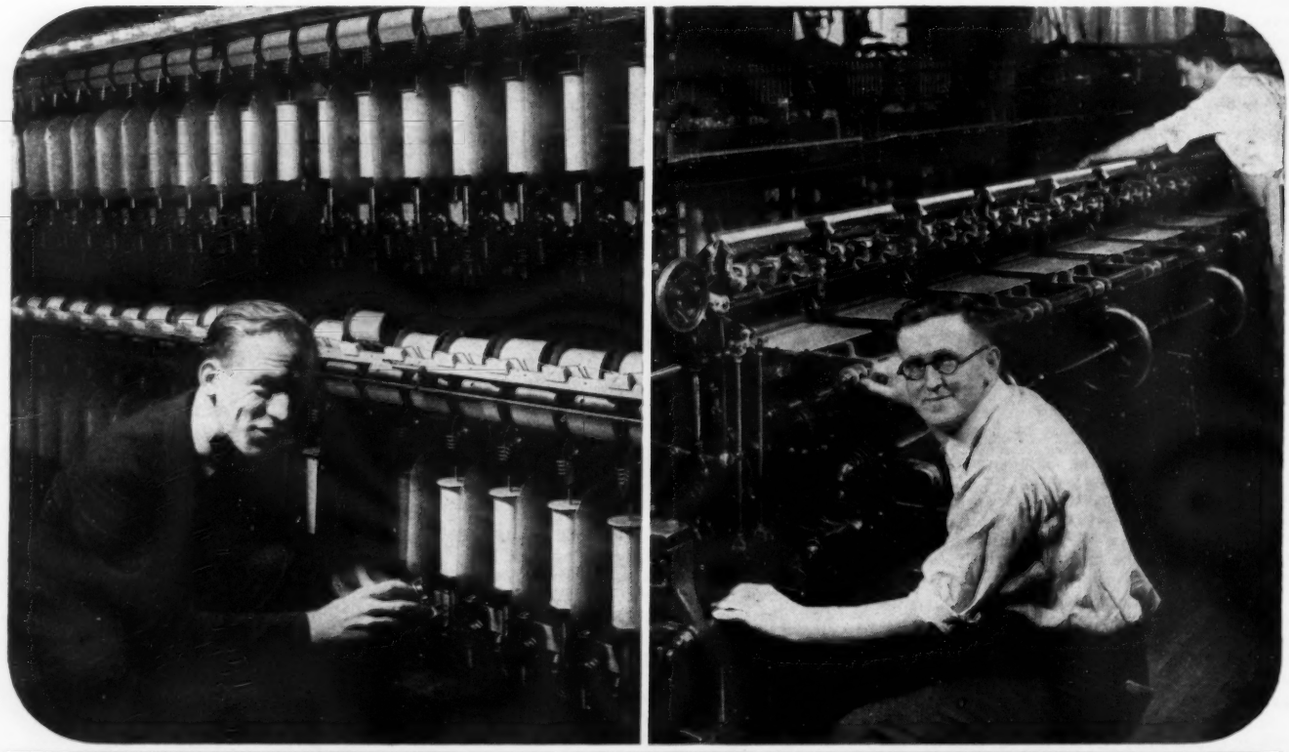
"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

"GULF'S higher quality LUBRICANTS have helped us *improve production!*"

. . . Say Superintendent and Foreman in this big mill



"We follow the GULF ENGINEER'S recommendations to the letter"

"We have had freedom from oil stains and better operation from our equipment since we adopted the Gulf engineer's recommendations," says this mill superintendent. "We find it a real economy to use these higher quality Gulf oils."

If you are seeking long-range savings and improvements in the operation of your mechanical equipment, the experienced Gulf lubrication engineer who calls at your mill will help you. His contacts with many mills in the industry have given him a groundwork of practical knowledge of textile plant lubrication—the kind of knowledge which can be translated into profits when applied to the operation of your equipment. He will work tactfully with your plant men to step up production efficiency and reduce costs for maintenance, through improved lubrication. And you pay nothing extra for this cooperative service.

The Gulf line of more than 400 quality oils and greases is quickly available to you through 1100 Gulf warehouses located at principal distributing points from Maine to Texas. For prompt delivery of the oils and greases you need, write or phone your nearest distributing point today.

GULF OIL CORPORATION • GULF REFINING COMPANY
Gulf Building—Pittsburgh, Pa.

GULF INDUSTRIAL LUBRICATION

Maintenance Costs SPLIT!

Basically different Principle means...

LESS WEAR
LESS MAINTENANCE
LONGER LIFE

The Westinghouse Hermetically-sealed Unit

...the HEART of every "TEMPERED COLD" WATER COOLER

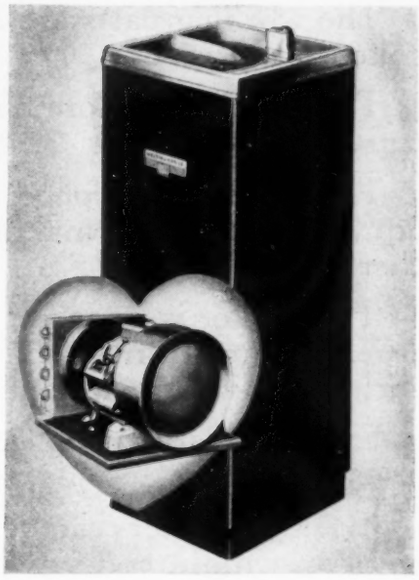
...reduces maintenance costs by eliminating (1) Belts (2) Pulleys (3) Gaskets (4) Shaft Seals (5) Commutator Brushes.

Fewer parts to wear. Even these parts operate in a permanent supply of oil. No oiling necessary. Built-in Watchman prevents costly motor burnouts. All this means EXTRA years of trouble-free performance.

. . . . . with the PERMANENT COST CONTROL PLAN

Here is a complete line of water coolers whose standout performance is backed by a proved plan for revising maintenance costs DOWNWARD. The plan has three parts:

1. Standard one-year free replacement warranty on unit and cabinet.
2. During the next four years, if the Hermetically-sealed Unit should fail, Westinghouse replaces it without charge—and pays all transportation and labor costs.
3. After 5 years, if and when the Hermetically-sealed Unit should fail, Westinghouse will replace it on an equitable exchange basis. The exchange unit carries four years' replacement protection with all the features of the second part of the plan.



Exclusive "PLUS VALUE" Features

Non-Clog Drain • Stainless Steel Top • Special Capacity Booster • High Efficiency Cooling Chamber • Built-in Watchman • Hermetically-sealed Unit.

Westinghouse "Tempered Cold" WATER COOLERS
"Build Friendly Relations"

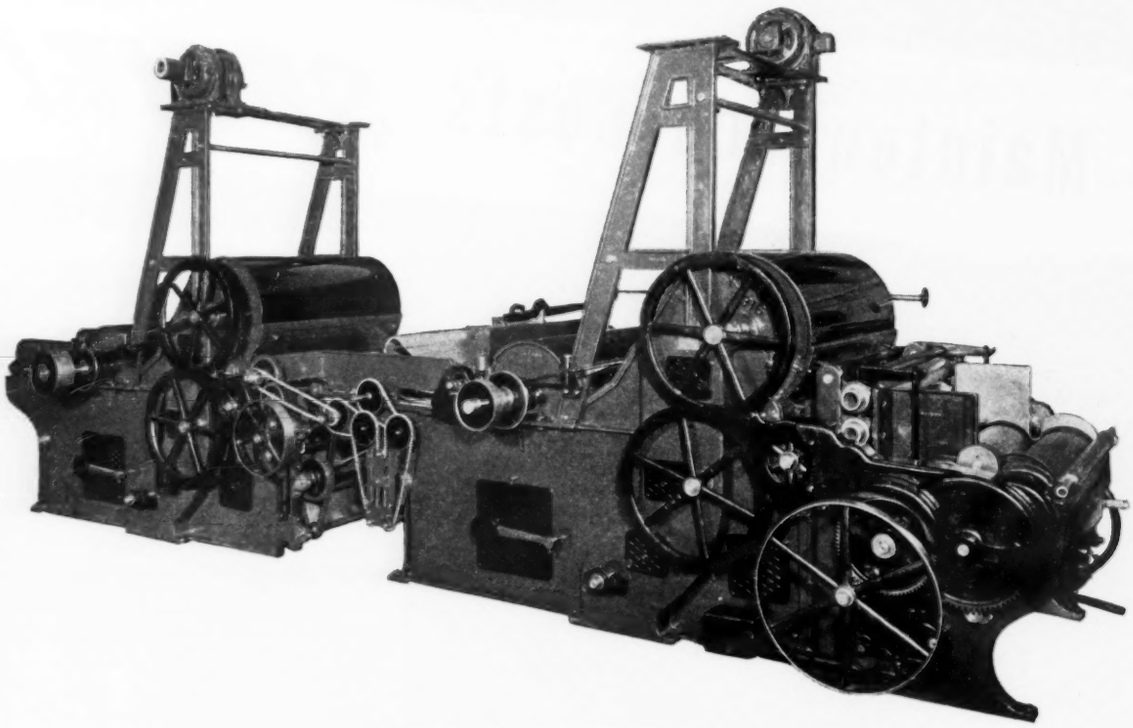
Westinghouse Section 74, 653 Page Blvd., Springfield, Massachusetts

Please send complete details on Westinghouse "Tempered Cold" Water Coolers and the Permanent Cost Control Plan.

Name .....

Address .....

City ..... State .....



A NEW PICKER BUILT INTO OLD FRAMES

The working parts are new—the frame, which will last forever if not broken, is old.

The cost is therefore about half the cost of putting the new working parts into new frames.

The picker is equipped with the Aldrich Synchronizer which has uniformly produced laps making evener card sliver than laps produced by any other picking system.

This picker is arranged to be fed either with the conventional hopper feeder or directly from the Gyrator, Cleaning, Blending and Distributing Machine provided with automatic feed boxes.

Every modern improvement which should be on a picker is built into this one—there is nothing old about it but the framework.

Your old pickers can be made into new pickers right where they sit on the floor, with little delay or inconvenience.

AldricH MachinE

Greenwood, **WorkS** South Carolina

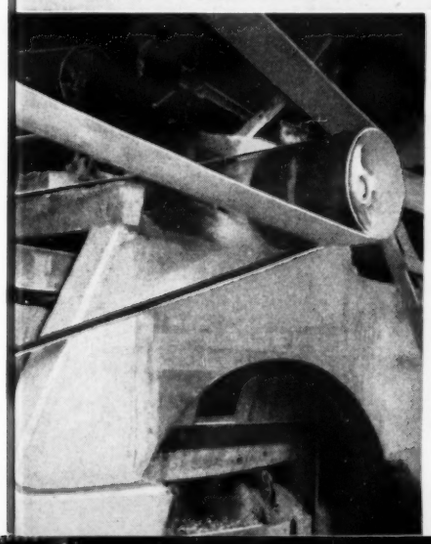
THIS IS WHAT CHALLENGER TRANSMISSION BELTS ARE DOING

Exacting Laboratory Tests
Make Sure Republic Challenger
Will Do the Same For You

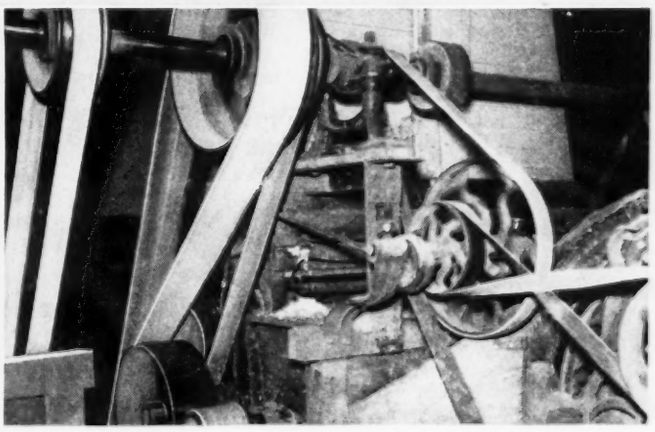
● Some of industry's most difficult drives . . . crushers, forging hammers, centrifugal pumps, line shafts, compressors, electrical generators, etc. . . . are belted with Republic's Challenger. Wherever the going is toughest—where heavy pull, shock starting and stopping, high speeds and rough wear demand the most of a belt—there you will find this tenacious, pulley-gripping Transmission Belt. Every scientific precaution is taken to maintain the high standard of quality and serviceability for which Challenger is noted. Your Republic Distributor is a reliable source of information on this and other Republic Belting. Republic Rubber Division of Lee Rubber and Tire Corporation, Youngstown, Ohio.

REPUBLIC RUBBER

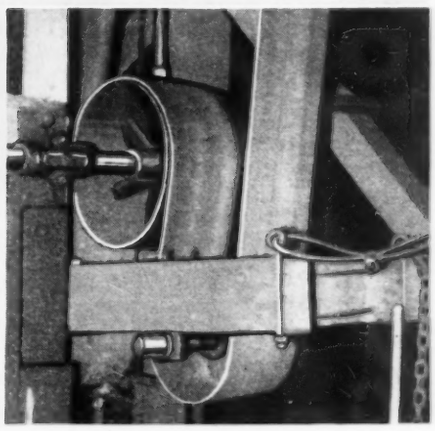
This crusher drive in a silica stone quarry presents severe service conditions for belting.



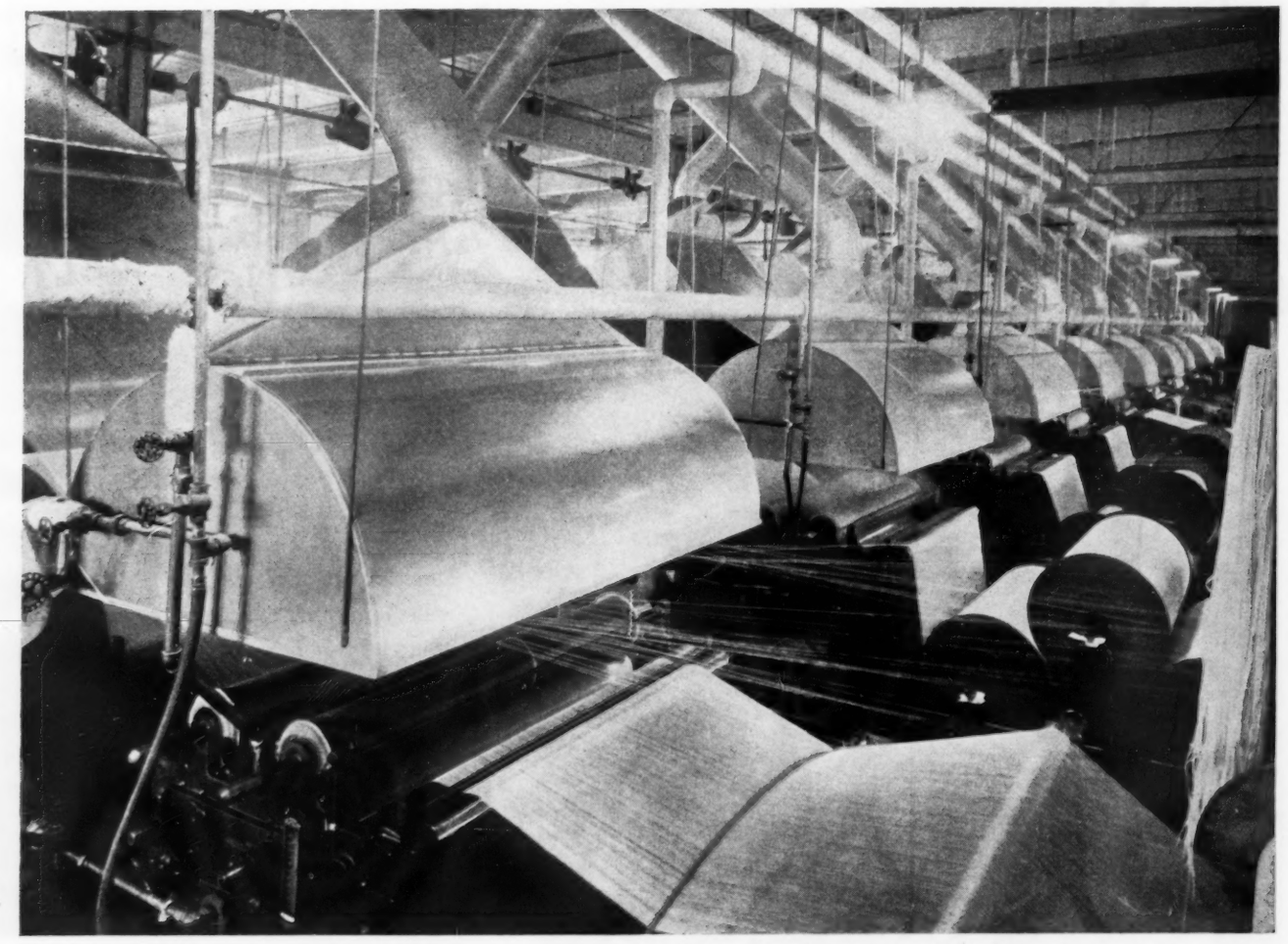
Challenger proves itself the ideal belt for small pulleys and sharp return bends on cotton-linting machine drives.



Cut-off saw drive in a sawmill, where intermittent service subjects belt to unusual strain and racking.



HOSE • BELTING • PACKING • MOLDED PRODUCTS



Stop staining your yarns with rusty drippings!

Build your hoods and ventilating ducts of Alcoa Aluminum sheet, as they did at this cotton mill. Condensation which drips from Aluminum is colorless. It causes no stains.

These slasher hoods and ducts were hand-tailored in a local sheet metal shop. The adaptability of Aluminum to hand working is quite evident from the fine appearance of this equipment. The light weight of Aluminum Alloys made handling easier during fabrication and erection, thereby reducing costs.

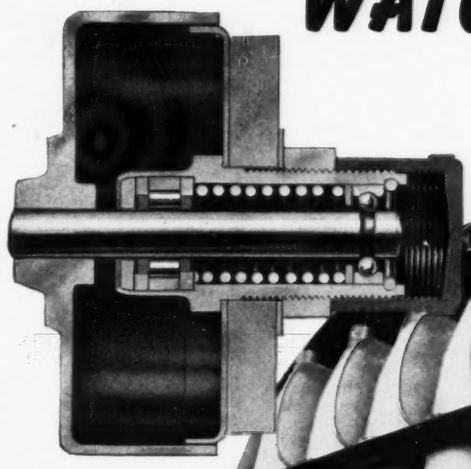
Alcoa Aluminum sheet, in various alloys and tempers, is carried in stock at many points throughout the country. Immediate shipment can be made to you from these warehouses. Why not figure on using Aluminum for that next job? ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM

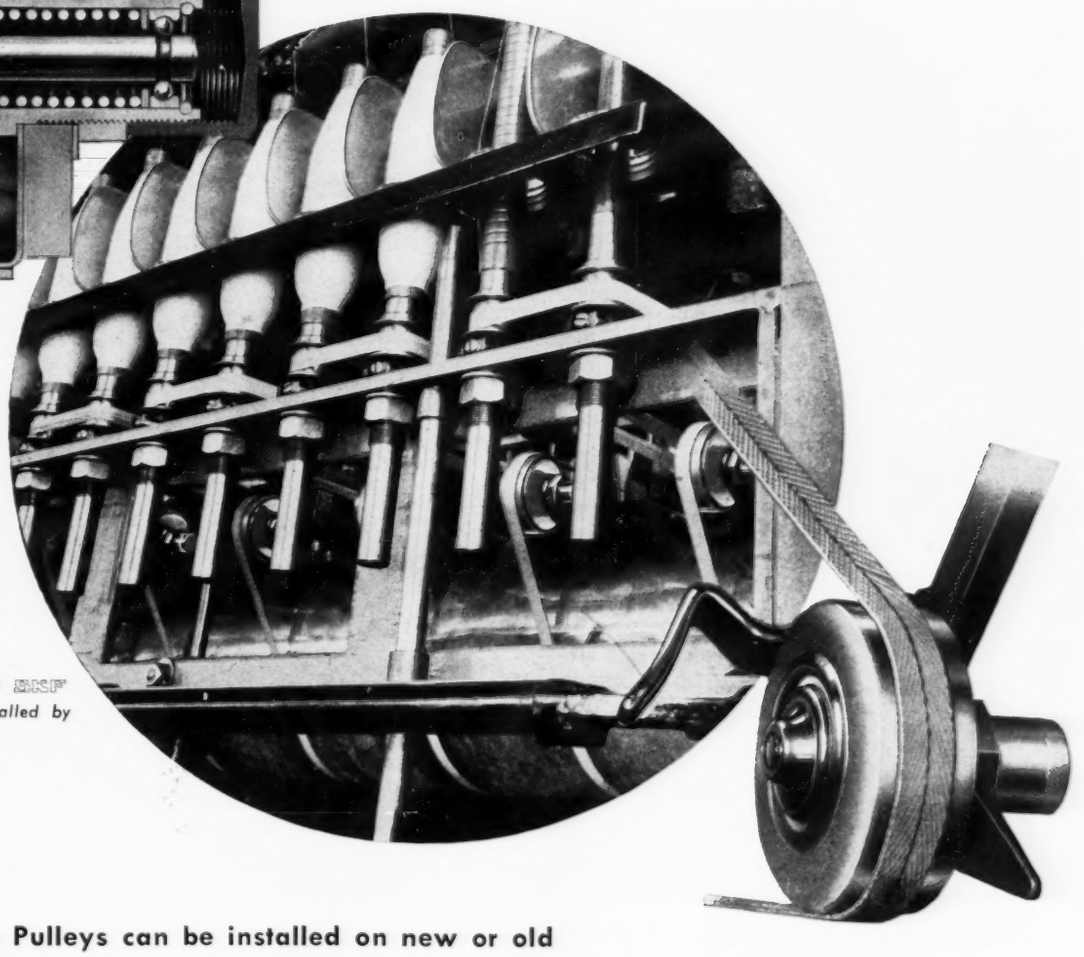
Reg. U. S. Pat. Off.

SPECIFY SKF! INSTALL SKF!

WATCH SKF CUT COSTS!



• *Cross-section view showing ball and roller bearings in SKF Tape Tension Pulley.*



• *A few of the 3,864 SKF Tension Pulleys installed by the Dallas Mfg. Co.*

SKF Tension Pulleys can be installed on new or old machinery. Their design and rugged construction completely eliminate the common troubles experienced in spinning and twisting frames equipped with plain bearing tension pulleys.

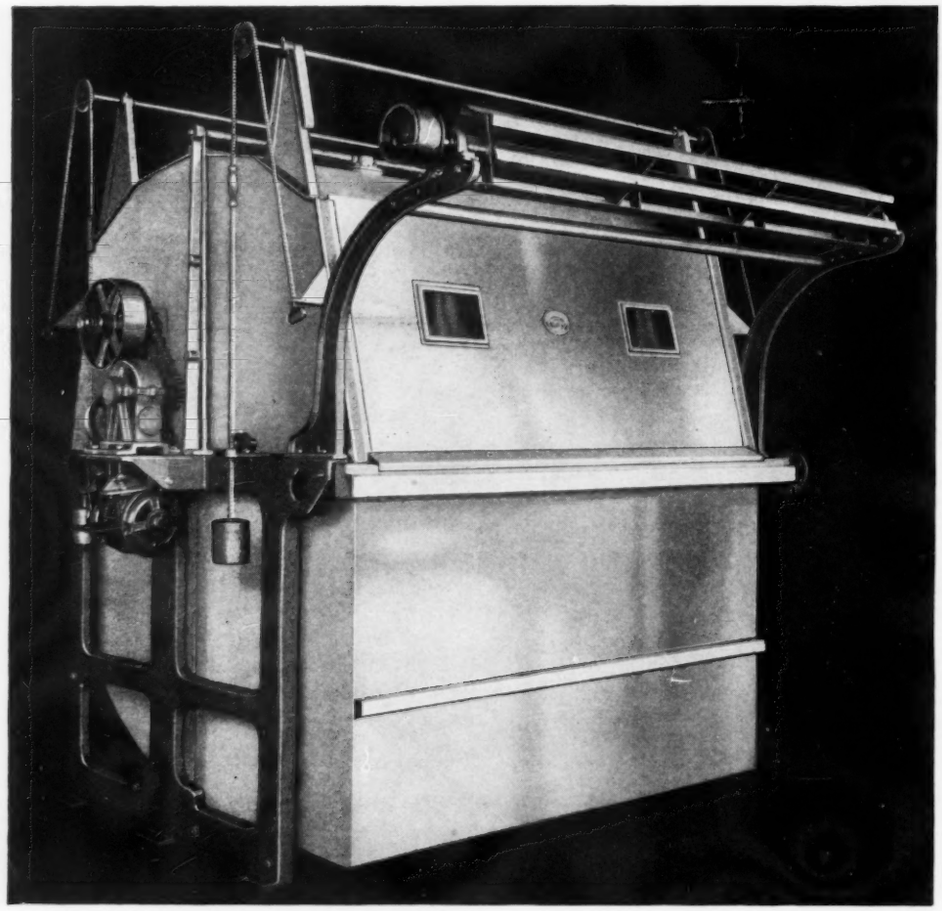
There are no wooden or fibre bushings to replace . . . no drag caused by fly accumulation . . . no attention needed for lengthy periods.

Consequently, they *DO* save maintenance. They *DO* save power. They *DO* save operating costs. Ask *any* textile machinery manufacturer about SKF Tension Pulleys, or write direct. 4465

SKF INDUSTRIES INC., PHILADELPHIA, PENNA.

SKF
TENSION PULLEYS

THE NEWEST AID TO BETTER PIECE DYEING AND BLEACHING



JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

In keeping with the most exacting modern demands for better piece dyeing and bleaching equipment, Hunter offers its new Model NK Stainless Steel Piece Dyeing and Bleaching Kettle.

As modern as 1940, the new Stainless Model NK offers the user these distinct advantages among others:

(1) Completely vibrationless construction—all driving and driven members supported in newly designed separate frames.

(2) Vari-speed drive for main reel for greater flexibility.

(3) A size and type for any piece dyeing or bleaching requirement.

(4) Tight top enclosure which is windowed and lighted . . . saves up to 35% of steam for the dyeing cycle.

(5) Proved performance on fabrics ranging from mohair plushes, tapestries, woolens, worsteds, unions, blankets, to rayon suitings.

If you contemplate replacing or expanding your present dye house units, it will pay you to ask Hunter for details. Write or call.

•

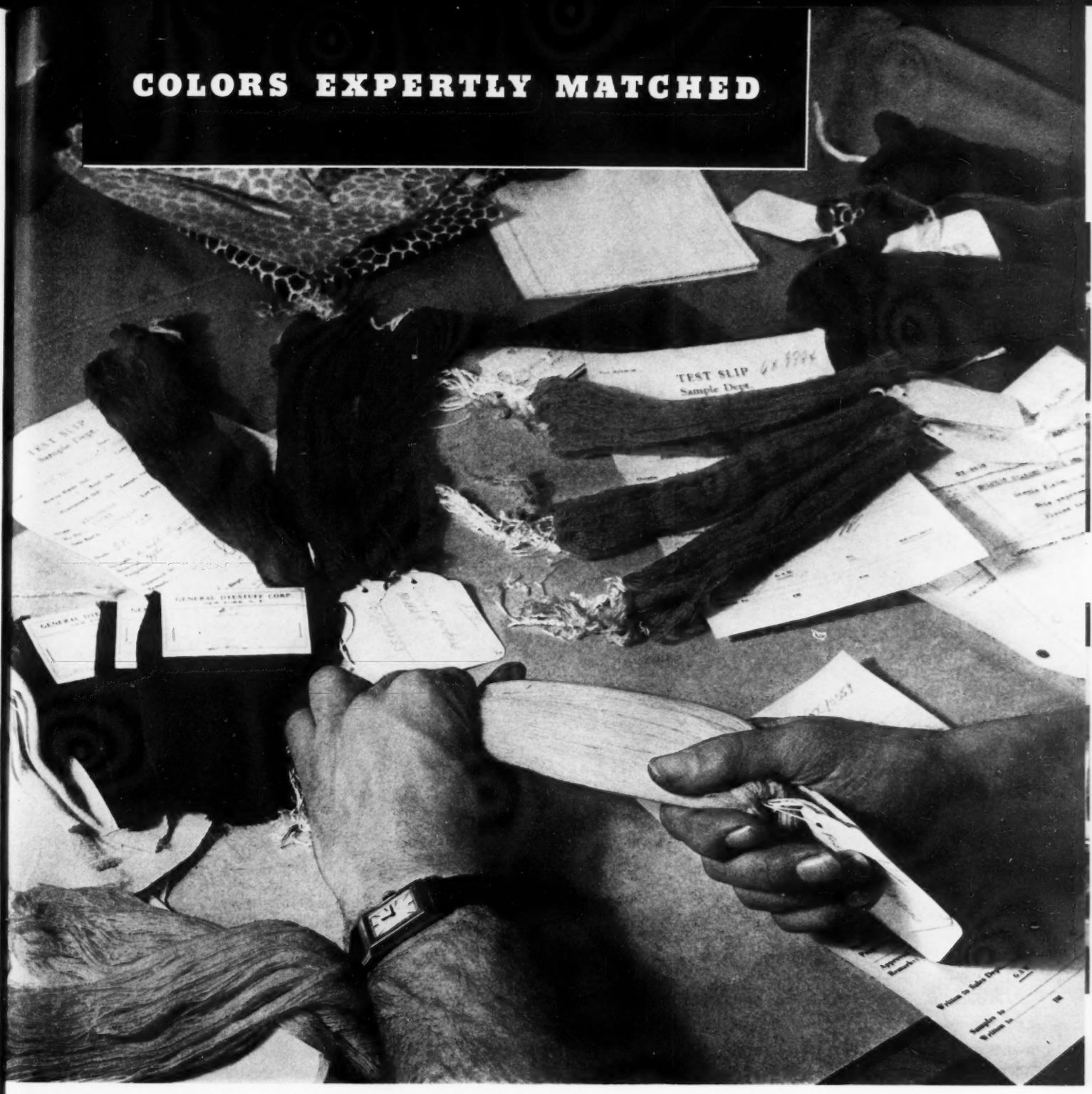
Founded 1874

•

North Adams, Mass.

JAMES HUNTER MACHINE COMPANY

Southern Agent: **CAROLINA SPECIALTY CO., Charlotte, N. C.**
Western Representative: **E. G. PAULES, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.**



The General Dyestuff Corporation offers you accurate color matches in the application of dyestuffs to natural and synthetic fibers. Our Technical Department with its modern laboratories and vast experience will be glad to suggest practical working formulas to assist you in your production problems.

GENERAL DYESTUFF CORPORATION

GDC

435 HUDSON STREET, NEW YORK, N. Y.

Boston, Mass. Providence, R. I. Philadelphia, Pa. Charlotte, N. C. Chicago, Ill. San Francisco, Calif.

What Product or

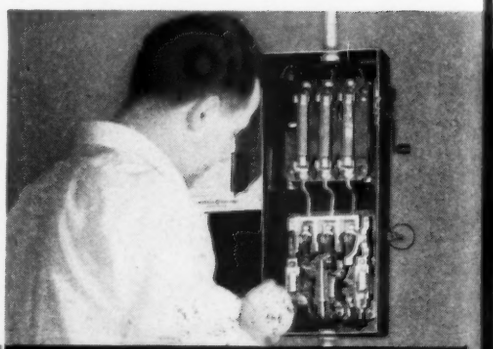
Spinning-frame motor with large, unobstructed openings, and aerodynamic fans to clear the motor of lint or dust. Tested by more than two years' experience

LOOM MOTOR SUSTAINS HIGH SPEED
The G-E loom motor is easy to oil, has exceptionally large oil reservoirs, and the electrical and mechanical characteristics to assure sustained high speed throughout the load range

THERE is scarcely an important process that does not require electrical operation or is not improved by it. And whether it's a totally enclosed, fan-cooled motor in a dye house, or a double-end-shaft gear-motor for mounting on the ceiling, or a motor with any of numerous standard and special modifications, you can get practically any type of electric equipment from General Electric.

From General Electric, too, you can get service in the emergencies when production may be disrupted by a flood or other catastrophe. Also from General Electric you can get promptly any renewal parts necessary to restore the equipment to original factory-new performance.

Pictured on these pages are a few of the representative equipments available from General Electric.



In one enclosing case, the G-E combination switch includes starter, short-circuit protection, running-overload protection, and disconnecting switch

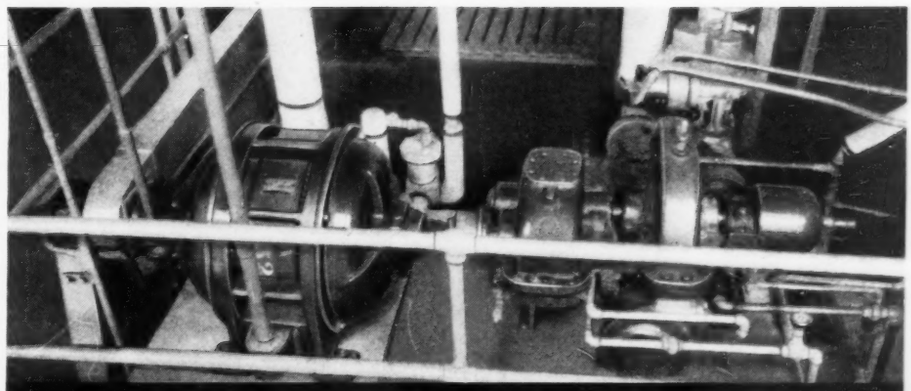
For direct low-speed drives, G-E gear-motors are designed for high efficiency, and they occupy little space. In a typical example, the entire motor unit, complete with gearing, is only 3 inches longer than a standard motor. Pictured: A napper driven by a G-E gear-motor

System Do You Need?

For many processes, there have heretofore been no satisfactory mechanical methods and no electrical system. A number of such processes have been improved by electrical operation.

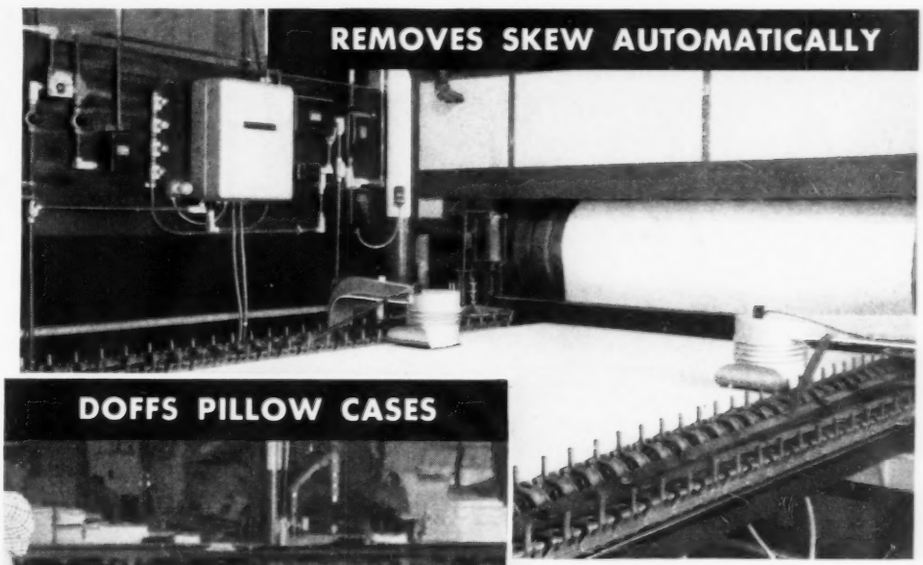
Work with mills and machinery manufacturers by General Electric engineers has brought successful attainment, for example, of weft-straightening, bow control, turbine-electric range drive, and specialized applications, such as an automatic air doffer to stack pillow cases.

Wherever you want electric drive, control, or auxiliary applications, ask for information from the nearest G-E sales-engineering office or write General Electric, Schenectady, N. Y.



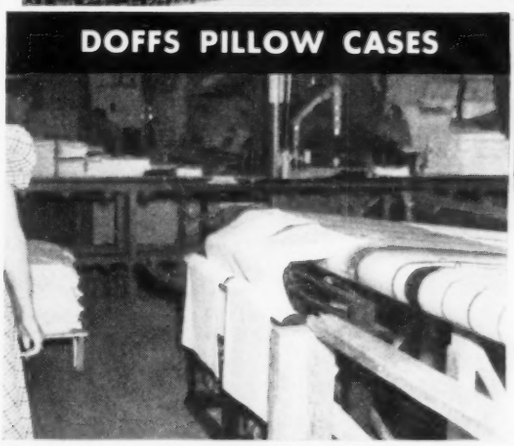
NEW TURBINE-ELECTRIC RANGE DRIVE

High-pressure process steam drives a turbine-generator for range-drive motor current—an advanced development for the textile industry. This is one of *four* kinds of range drive furnished by General Electric. The others are *d-c adjustable-voltage, d-c constant voltage,* and *adjustable speed a-c motor drive*



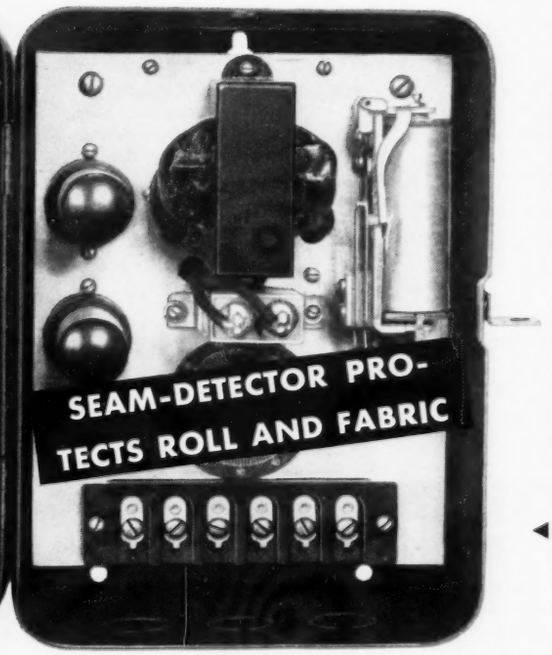
REMOVES SKEW AUTOMATICALLY

For automatic and continuous correction of skew, complete photoelectric weft-straightening control equipment—another development of General Electric for improved processing



DOFFS PILLOW CASES

◀ Stacked up by air with the greatest of ease. Electrically controlled puffs of compressed air, delivered at the right time and place, automatically flick pillow cases off this conveyor and stack them

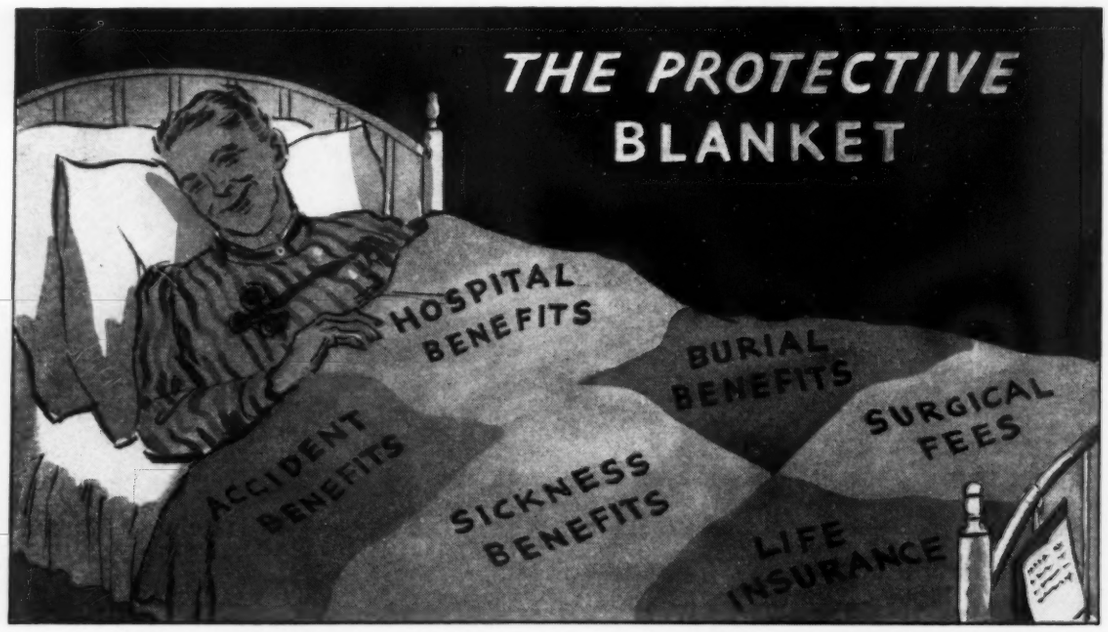


SEAM-DETECTOR PROTECTS ROLL AND FABRIC

◀ Automatic letup. For fast, accurate easing up on the calender roll when the seam comes through, a G-E seam-detector equipment provides instant and automatic pressure release and pressure reset. This avoids denting the fiber roll and the consequent marring of cloth patterns

GENERAL ELECTRIC

011-543



IT'S THE MACHINE AGE BUT—

YOUR PROFITS DEPEND ALSO ON THE

MAN BEHIND THE MACHINE

Your profits do not come from machines alone! Profits depend also on the human element — the operators of your machines.

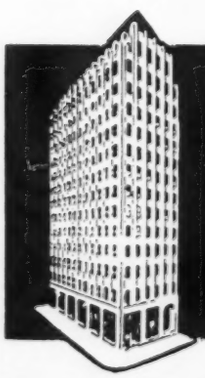
When one of your machines breaks or becomes inefficient, there is a ***visible loss***—repaired at your expense.

But employee inefficiency often is an ***invisible loss***—harder to detect. Employees who operate your expensive machinery are frequently inefficient because they are in poor physical condition or worried over family ills, doctor and hospital bills.

The "Protective Blanket" will cover the human breakage in your plant and, ***at no cost to you,*** will substantially increase your profits.

WRITE FOR ILLUSTRATED BOOKLET — IT'S FREE!

Without obligation, a special prospectus that will outline a Protective Plan especially for the needs of your employees will be prepared at your request. With your consent, in a dignified way without "high pressure", our representatives will explain to your employees for their rejection or approval the plan you select.



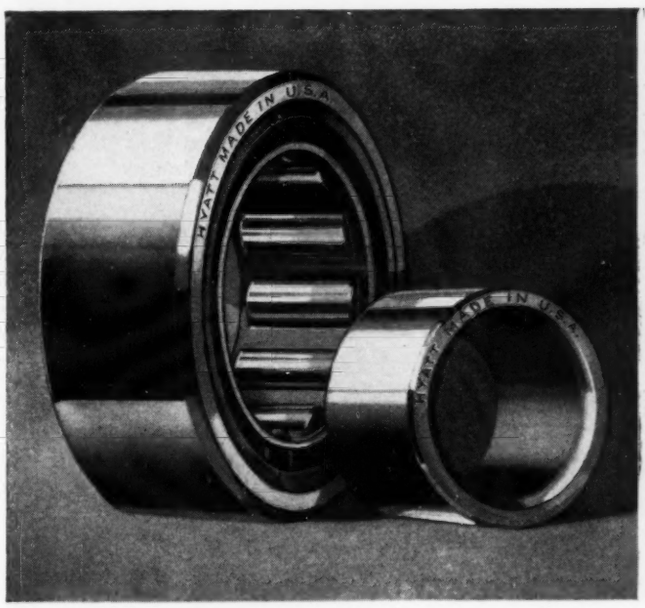
PROTECTIVE LIFE

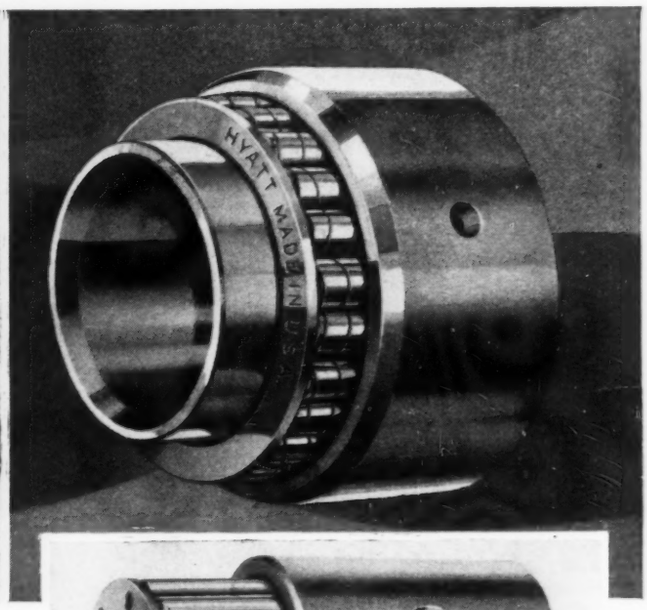
INSURANCE COMPANY

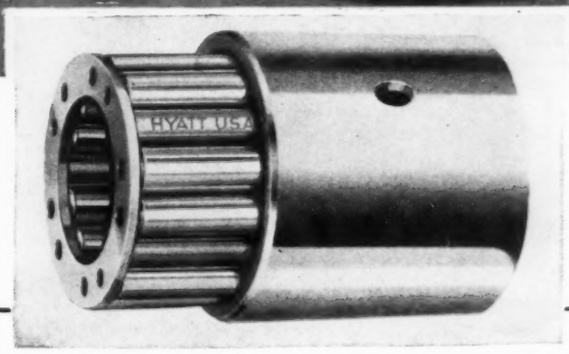
William J. Rushton, President

BIRMINGHAM ALABAMA

SERVING AND SAVING
YEAR AFTER YEAR







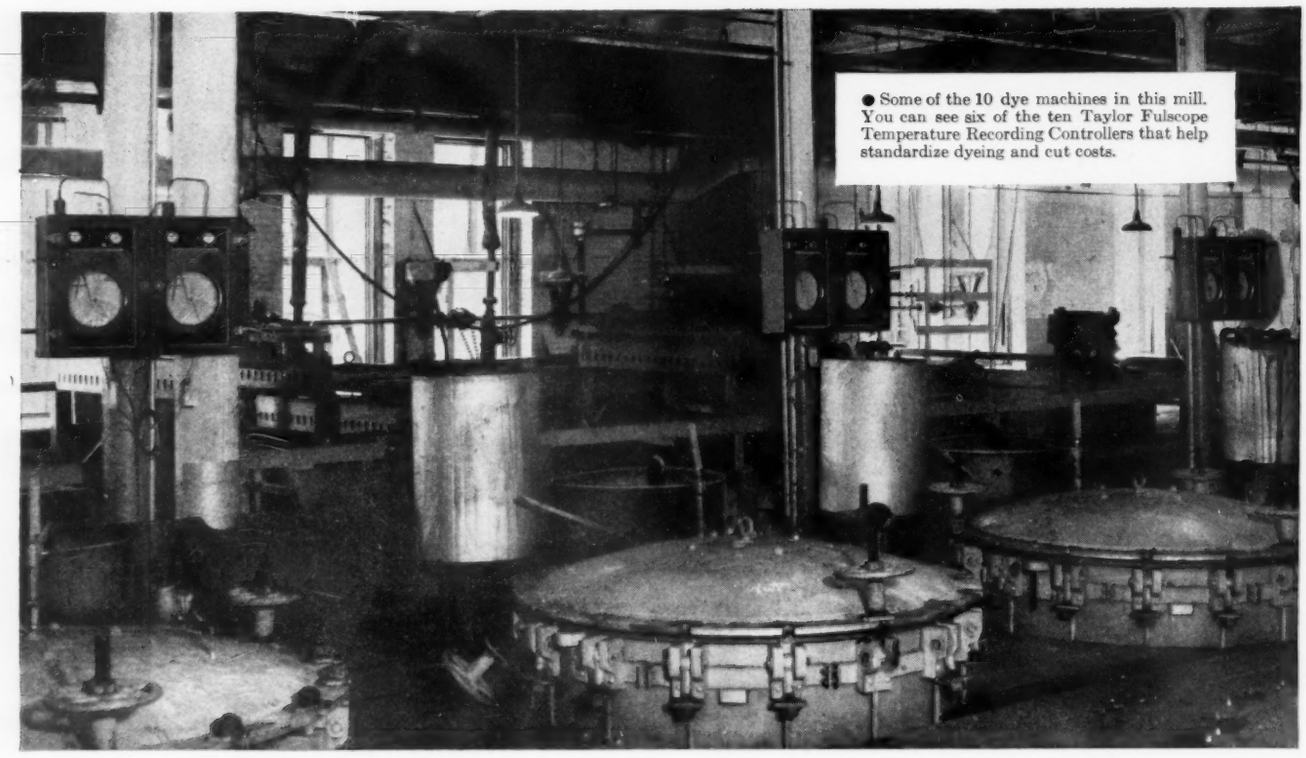
Whether you build, sell or buy textile machinery, Hyatts can serve you. Let us tell you how.

In all makes and kinds of textile machinery, year after year, you witness the widespread application of Hyatt Roller Bearings. Now, as new machines emerge in 1940, you again will see Hyatts serving and saving . . . everywhere.

Looms, spinning frames, cards, pickers, slashers, dry cans, washers, calenders . . . longer-lived machines with Hyatt equipment ready for work without worry of bearing wear or care or replacements. Hyatt Bearings Division, General Motors Sales Corporation, Harrison, New Jersey.

HYATT *Roller* BEARINGS

RUG MILL GETS STRANGLE HOLD ON DYEING TROUBLES !



● Some of the 10 dye machines in this mill. You can see six of the ten Taylor Fulscope Temperature Recording Controllers that help standardize dyeing and cut costs.

Dyeing standardized, costs down, shade reproduction simplified! These are results of installing 10 Taylor Temperature Controllers!

THIS large rug and carpet mill dyes yarns with 10 package dye machines. It thus gets complete and uniform penetration of the dyes, and important savings in processing. But this mill wanted even more efficient processing.

So mill executives talked with Taylor. Shortly after, they put all 10 package dyeing machines under the watchful eyes of 10 Taylor Fulscope Temperature Recording Controllers. And—sure enough—the closer temperature control this mill got resulted in more even dyeing, proper exhaustion of the bath, and a saving in dye and heating costs. In addition, the written records of processing enabled this mill to duplicate exactly any dyeing temperature and time—thus greatly simplifying shade reproduction!

MORAL: No matter how efficient *your* dyeing equipment may be—remember—you can most likely make even *greater* improvements in quality and *greater* cuts in costs with Taylor Temperature Control. A Taylor Control System is easily installed on present equipment. And it pays for itself in a comparatively short time. So right now start investigating this sturdy control. Let a Taylor representative give you all the facts. No obligation. Write today to Taylor Instrument Companies, Rochester, N.Y. Plant also in Toronto, Canada. Manufacturers in Great Britain: Short & Mason, Ltd., London.

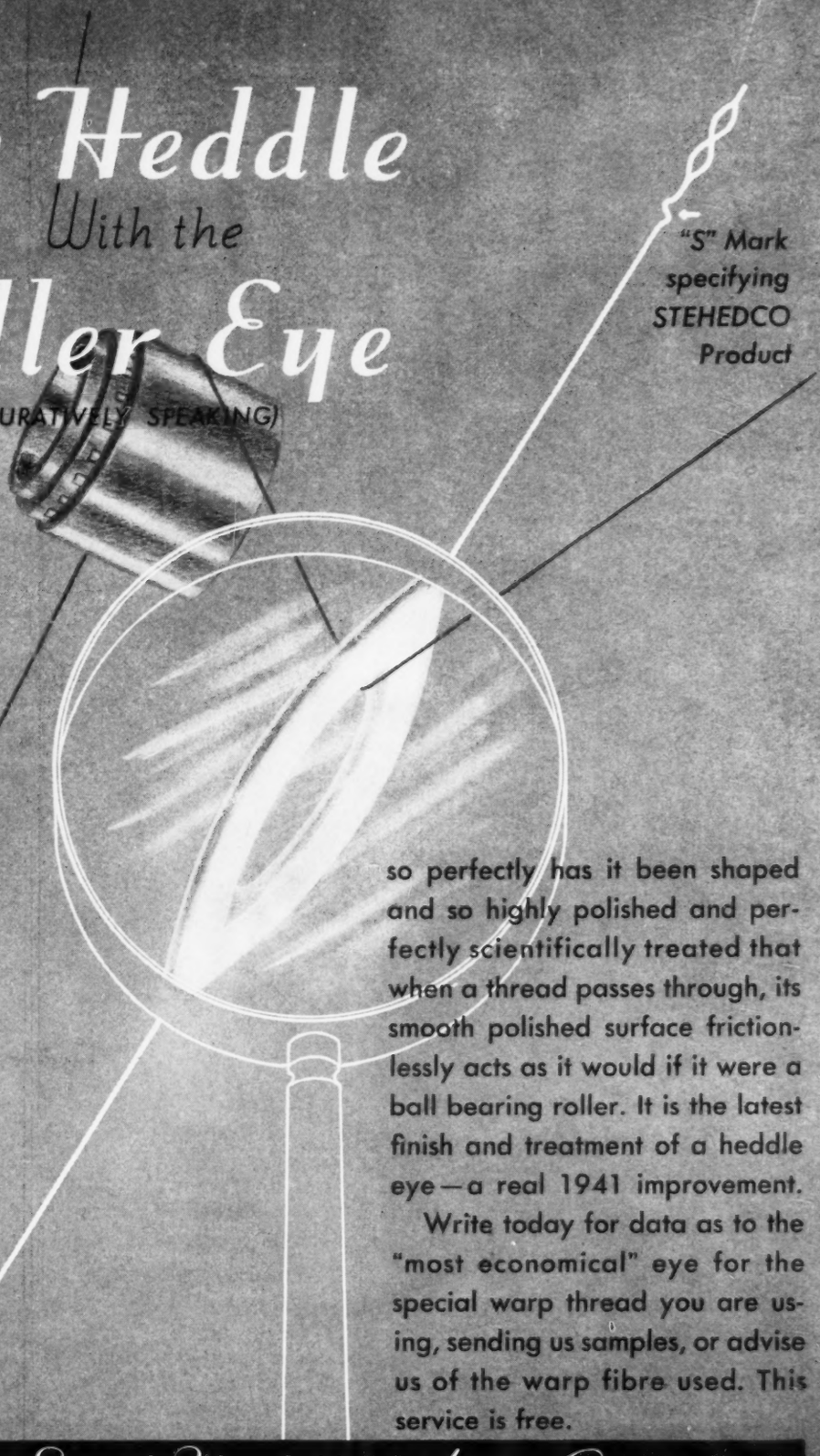
Taylor

Indicating Recording Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

The Heddle With the Roller Eye

(FIGURATIVELY SPEAKING)



"S" Mark specifying STEHEDCO Product

so perfectly has it been shaped and so highly polished and perfectly scientifically treated that when a thread passes through, its smooth polished surface frictionlessly acts as it would if it were a ball bearing roller. It is the latest finish and treatment of a heddle eye—a real 1941 improvement.

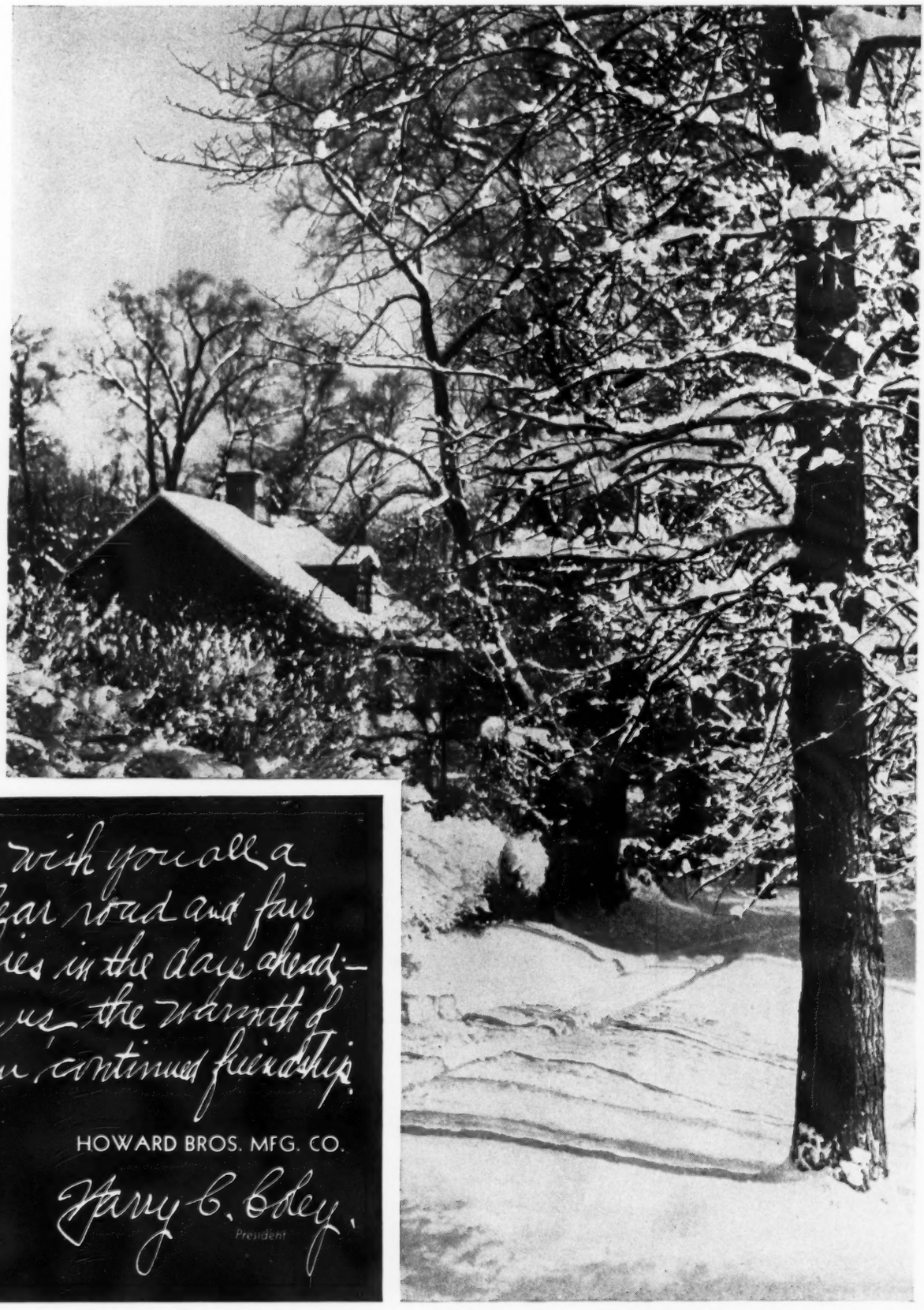
Write today for data as to the "most economical" eye for the special warp thread you are using, sending us samples, or advise us of the warp fibre used. This service is free.

Steel Heddle Mfg. Co.

STEHEDCO HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES.

2100 W. Allegheny Avenue PHILADELPHIA, PA.

BRANCH OFFICES ALL OVER THE WORLD

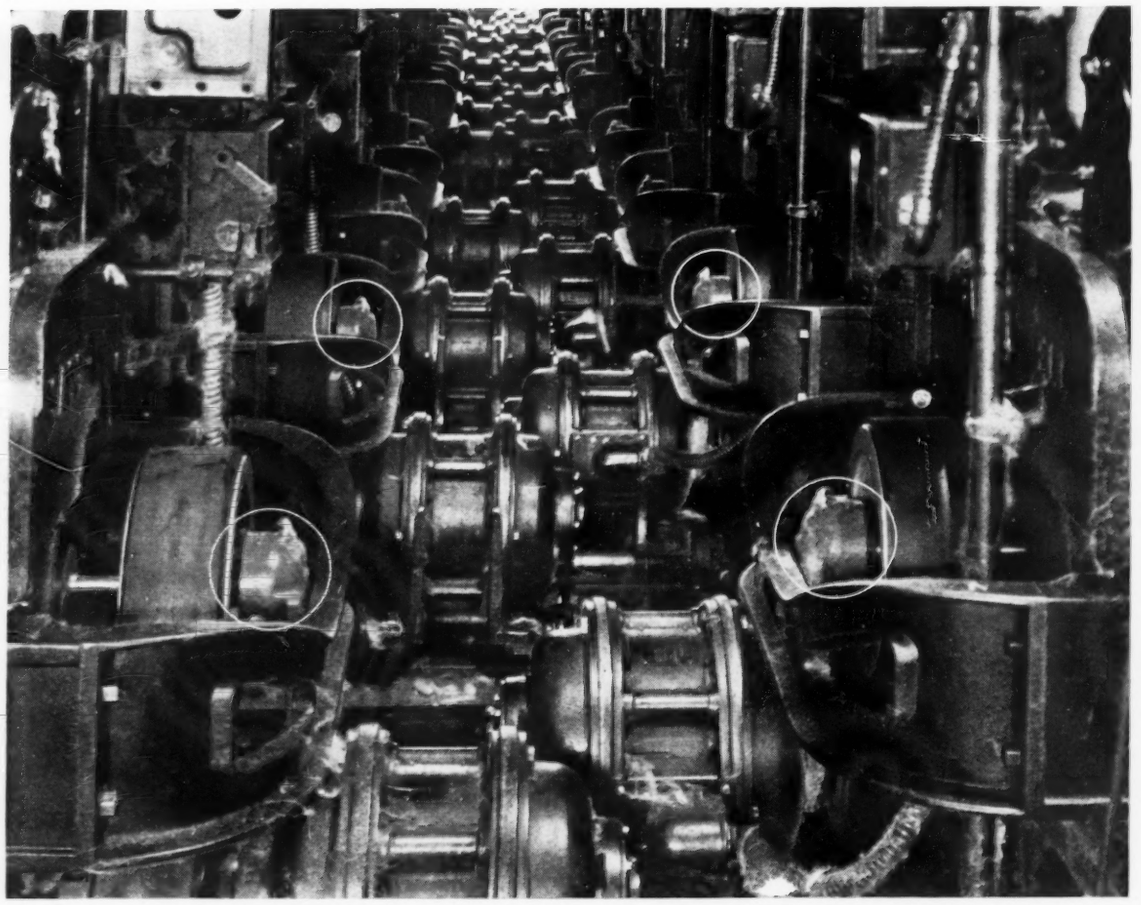


Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

STANDARD OIL LUBRICANTS provide *money-saving* performance because they are especially designed for the protection of textile machinery . . . As proved by long years of experience in this field, STANDARD OIL LUBRICANTS help to keep maintenance, operation and power costs—as well as lubrication costs—at a *low level.*

STANDARD OIL COMPANY

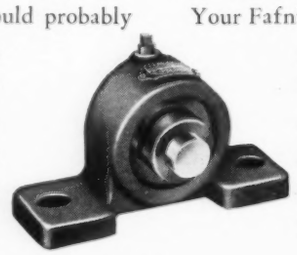
INCORPORATED IN KENTUCKY



WOULDN'T FAFNIRS ON YOUR SPINNING FRAMES MATCH THESE WORTHWHILE SAVINGS?

The plain bearings originally used on these spinning frames in a large Eastern mill were guilty – on four counts. They leaked oil onto driving belts, necessitating frequent and costly belt replacement. The inboard bearing threw oil on yarn . . . costly spoilage. And due to the high speed of cylinder operation, power loss was considerable. Frequent oiling was required.

Fafnir Ball Bearing Pillow Blocks would probably bring the same savings on your frames that they did on these: A substantial saving in power. . . . Big reduction in maintenance cost, for they're lubricated only *semi-annually*. . . . No leakage of oil onto finished yarn . . . or onto belts.



Best of all, you can modernize with Fafnir Transmission Units without costly rebuilding or delay. Simply slip the shaft into the unit, turn the exclusive Fafnir Self-Locking Collar with a finger-twist, and set the screw to hold it in locked position. No machining, threading, sleeves, locknuts or adapters. It's easiest of all units to install.

Your Fafnir distributor will help you modernize for profit, with the most complete line of ball bearings and transmission units in America. Write for Textile Bearing catalog. The Fafnir Bearing Company, New Britain, Conn. . Atlanta . . Birmingham . . Boston . . Charlotte . . Dallas . . Houston.

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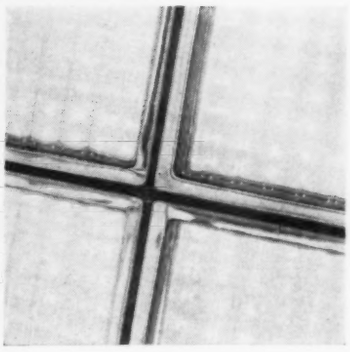
THE BALANCED LINE . . MOST COMPLETE IN AMERICA

"You'd be smart to use Glass Blocks in building your new mill!

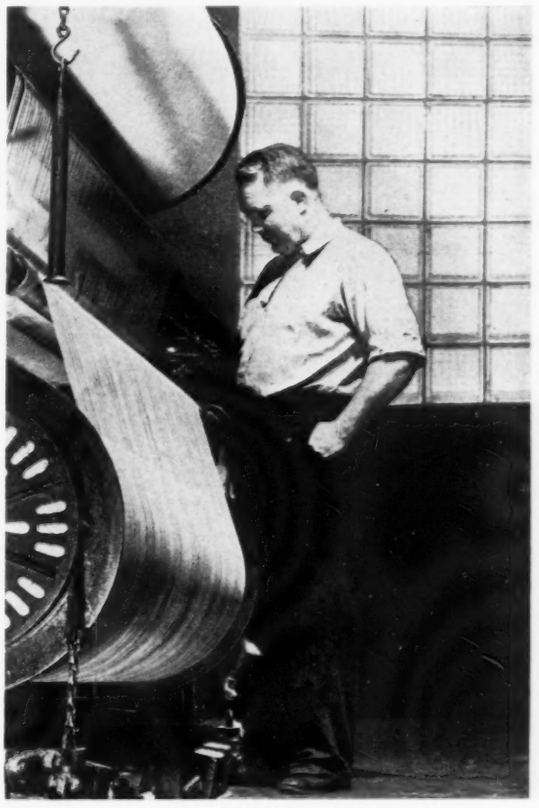
Look what they're doing for us!"

"REMEMBER THE SASH TROUBLE we used to have in the old plant? Condensation on the windows was so bad that the sash rotted out in almost no time. We were always replacing and painting it. That's one reason we used glass blocks in our new plant.



"PC GLASS BLOCKS cured that sash headache. Look. There's no sash in this panel—nothing to corrode and nothing to paint. The whole panel is one easily-cleaned surface of glass and cement. Glass blocks have helped us cut maintenance costs.

"THOSE CHARTS show how regular we keep our temperature and humidity. PC Glass Blocks insulate so well that even when it's freezing outside, it is warm near the glass block panels. That means less condensed moisture on the light-giving areas. This closer regulation of temperature and humidity has helped us keep our product more uniform and has cut down rejections.



"NOTICE HOW BRIGHT AND CLEAN it is in here with all this diffused daylight. We not only save money on lighting, but I think that the men do better work when they have this pleasant light to work in. And because no dirt can filter through that solid panel, we keep our fabrics cleaner and have less spoilage."

PC Glass Blocks offer you many practical, money-saving advantages—all in a single building material. Before you make any plans for new construction or remodelling, send for our big, free book on PC Glass Blocks. Full of pictures of actual installations—with valuable facts that will show you how they will help your plant operation. Send for this FREE Book. Mail the coupon today.

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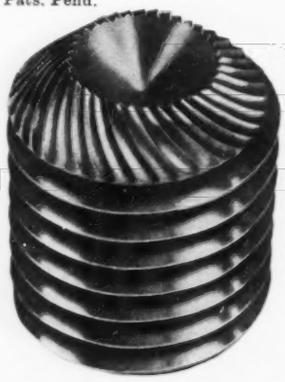
UNBRAKO

COMES TO GRIPS WITH AN OLD PROBLEM— SOLVES IT BY GRIPPING

Fig. 1641 Pats. Pend.



WHEREVER ORDINARY SET SCREWS WORK LOOSE, USE "UNBRAKO" SELF-LOCKING HOLLOW SET SCREWS—THEY AUTOMATICALLY LOCK TIGHT AND STAY THAT WAY.

Fig. 1645 Pats. Pend.

THE PROBLEM

Ever since the "Safety-first" movement swept the country and the dangerously projecting square head set screw was banned from exposed machinery, industry has been troubled by the new type safety socket set screw working loose under vibration. This is because the safety set, due to its socket feature, can only be worked by a comparatively light and short hex bar wrench, and therefore cannot be tightened up anything like as hard as its square-headed rival.

THE SOLUTION

Now it's the Knurled Point "Unbrako" Self-Locking Hollow Set Screw which completely solves this drawback. Even when pulled up only moderately hard, the ingenious knurled "Unbrako" point gets such a tenacious grip that the severest vibration just can't shake it loose . . . yet removal or adjustment is easily made with the ordinary hex bar wrench and the screws can be used over and over again.

On your machines "Unbrako" means added safety and reduced maintenance costs. Write for catalog and samples today.

Fig. 1646 Pats. Pend.

UNBRAKO **SQUARE HEAD SELF-LOCKING SET SCREWS**

also have the same desirable protective features described above. This combined with the well-known high strength and accuracy of "Unbrako" Products, make them your best buy. Send for samples and literature for these, too.

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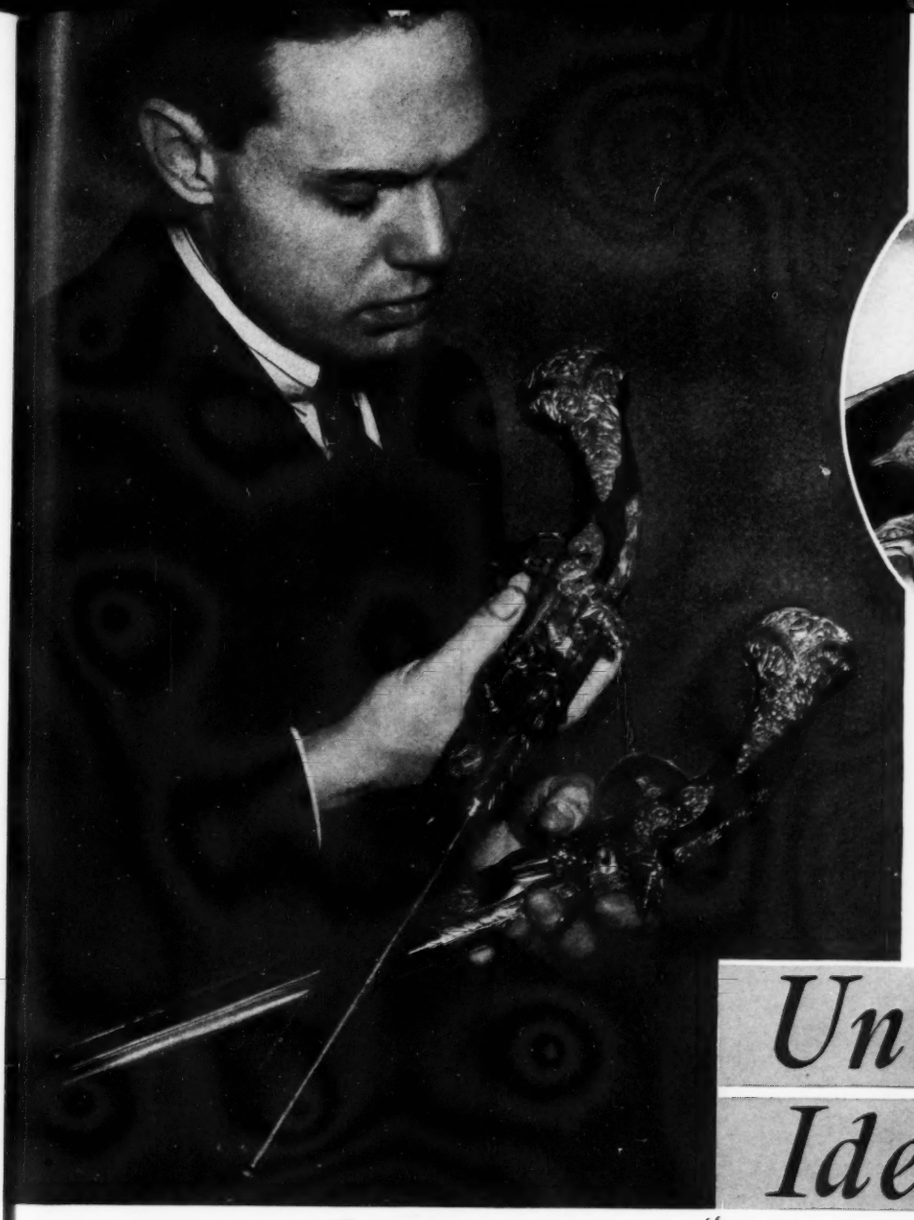

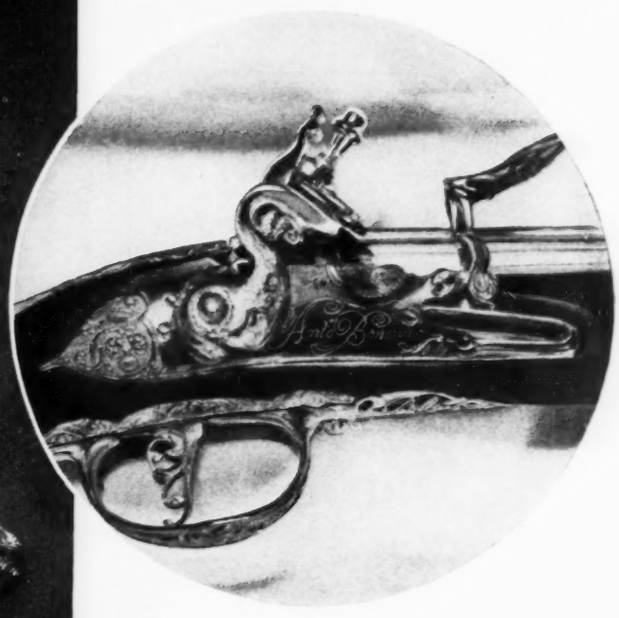

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Evelyn's Diary, 1646—"CAME this evening to Brescia—purchased of old Lazarino Cominazzo my first carbine, which cost me 9 pistoles"—today old Cominazzo's pistols have fabulous values. The mark of the maker has always been the guarantee of hidden qualities. As true today as three centuries ago. Particularly in the realm of textiles with new styles, new fibres, new finishes, new constructions, is this true. Kaumagraph Dry Transfers have been identifying quality, guaranteeing responsibility, and helping sales for over thirty years. They are your answer to unmistakable identification.

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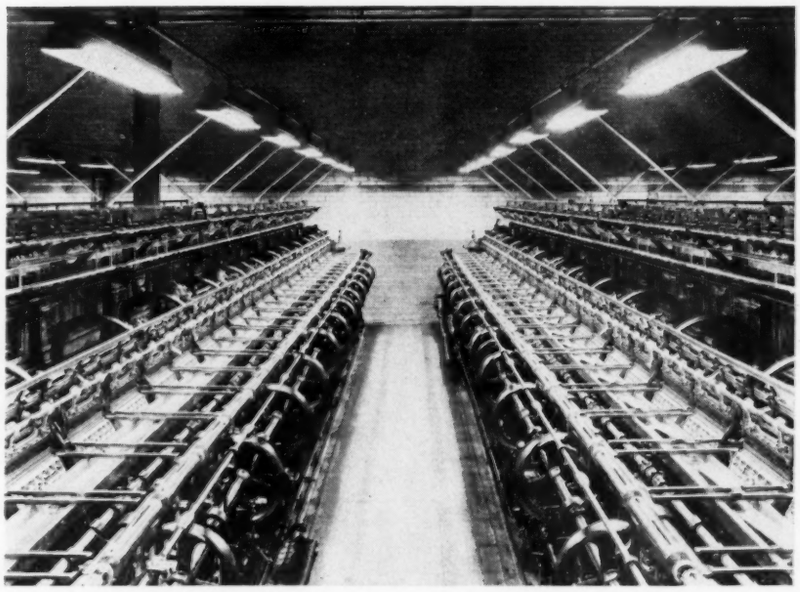
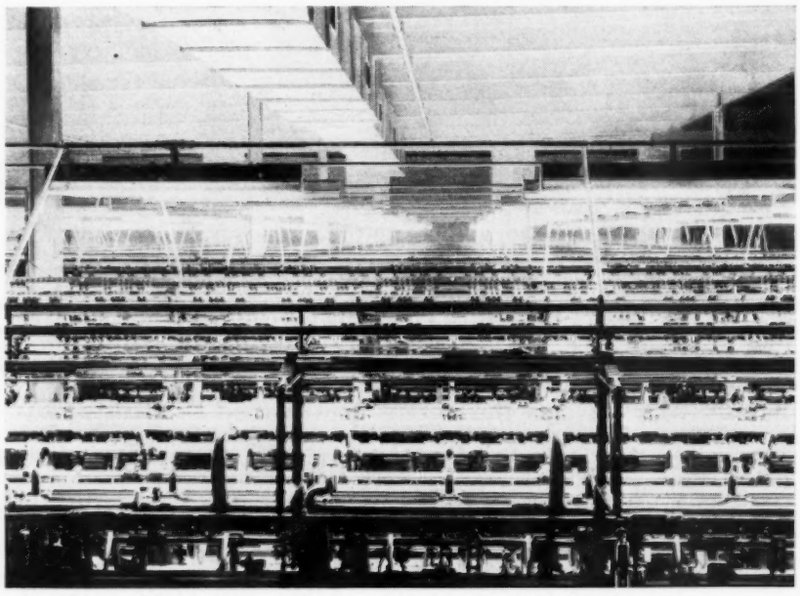
G-E MAZDA F lamps come in 18, 24, 36 and 48″ lengths and several wattages in daylight and white colors, and in 18, 24, and 36″ lengths in gold, pink, blue, green, and red. They are recommended for use with equipment providing good power factor . . . thereby assuring maximum use from the wiring system.



The Hudson Silk Knitting Company of Charlotte, N. C., manufacturer of full-fashioned silk hosiery, operates a modern windowless, air-conditioned plant. It is also light-conditioned with G-E MAZDA F (fluorescent) daylight lamps . . . which provide high-level, daylight quality illumination.

The above view is down the knitting aisle. Eight 30 watt 36″ daylight fluorescent lamps equip each unit over each machine. Units are spaced about 36″ apart and mounted 41″ above the knitting bar. The installation initially provided more than 50 footcandles.



This view looking across the rows of machines shows how extensive the fluorescent lighting installation is. Because this new light source is cool, it is possible to mount fixtures close enough to the work to obtain a high level of illumination without causing the operators discomfort.

These new G-E MAZDA F daylight lamps offer textile mills wide uses . . . especially for inspection and other fine work. For further information about these new lamps, write to General Electric Co., Dept. 166-C-A, Nela Park, Cleveland, Ohio.

G-E MAZDA F LAMPS

GENERAL ELECTRIC

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High solubility . . . . greater breaking strength!

If you are processing spun rayon, here's what Houghto-Size S R will do for you. Besides its exceptionally high solubility and greater breaking strength, it will assure elasticity, less decrease in elongation, high weave-room efficiency, easy removal in the boil-off . . . and real economy.

A concentrated product, developed, tested and proven in mills. It is superior on every count. You can use it with any starches or gums . . . or on any spun rayons or mixed fiber warps. Our trained textile experts are ready to prove this product in your mill. Write us today for folder No. 2-159.

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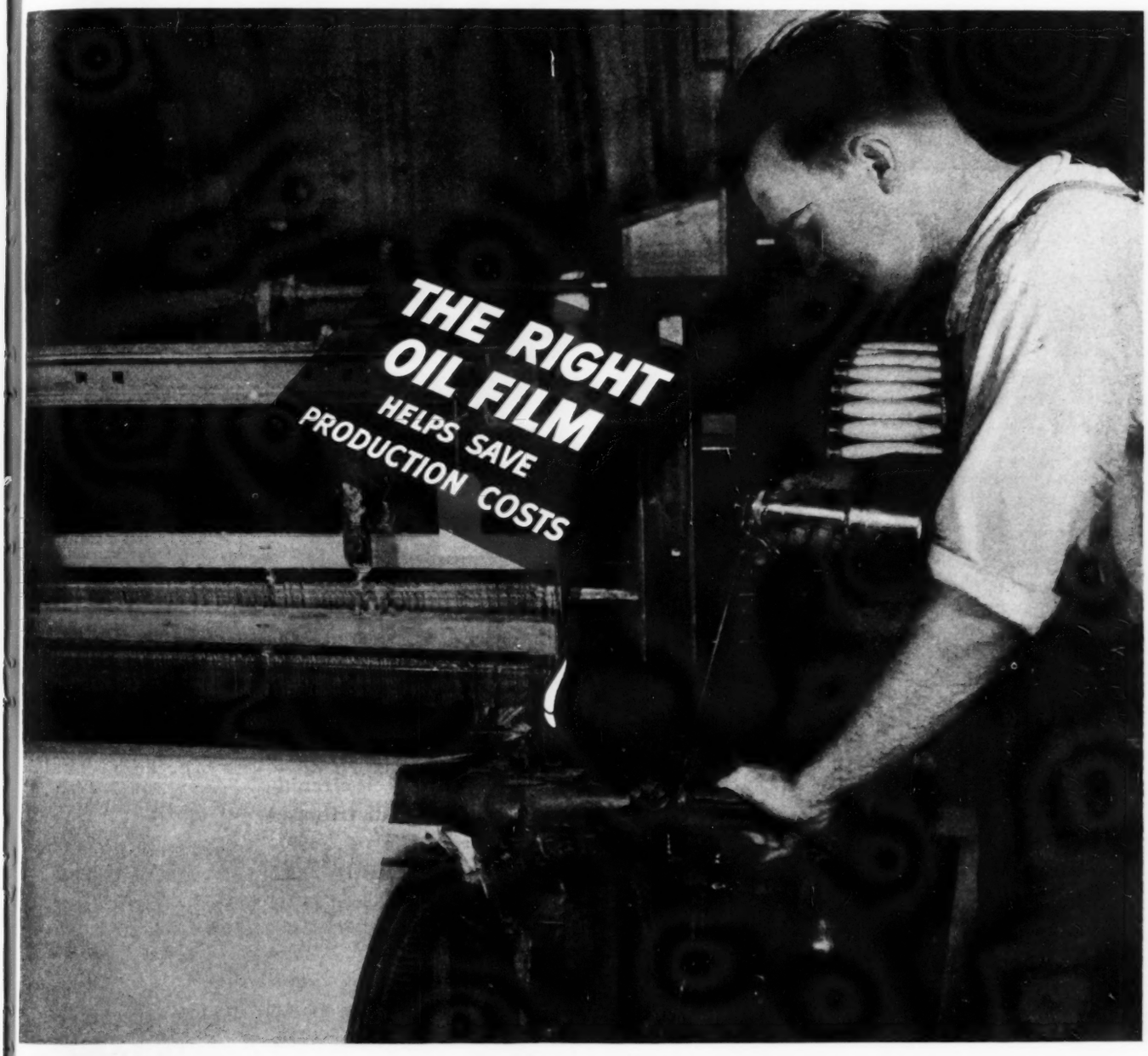

Correct Lubrication

NEW LUBRICANTS ahead of new needs . . . developed in close cooperation with machine builders by famous Socony-Vacuum laboratories.

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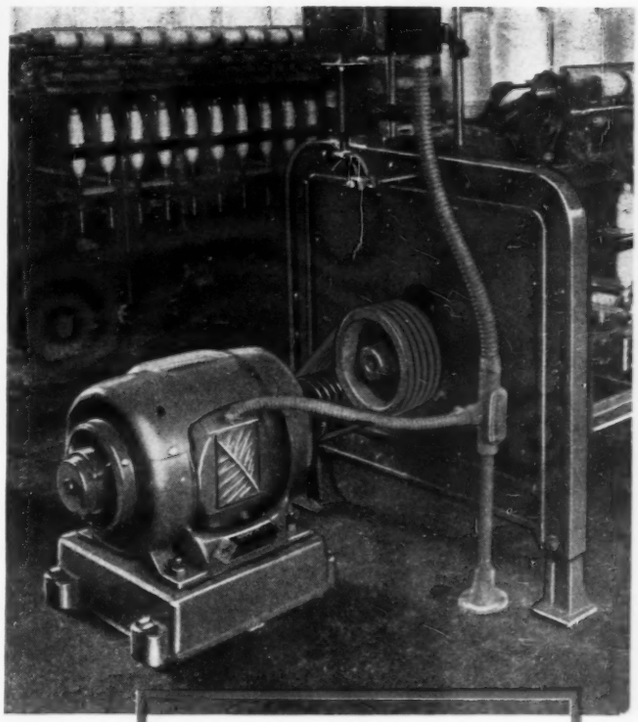
COTTON

An A. B. C. Publication

A.B.C. = Audit Bureau of Circulations = FACTS as a yardstick of advertising value

STOP TEXTILE DRIVE TROUBLES WITH TEXROPE!

Why Continue to Use Out-of-Date Transmission Equipment? Let Texrope Drives Help You Cut Power Costs...Increase Mill Efficiency...Beat Broken Yarn Hazards . . . Reduce Shutdowns!



So well established have Texrope V-belt Drives become in the textile industry that it's hardly a question of IF but of HOW SOON you will switch to the big savings and better performance they can bring you!

Ever since Allis-Chalmers developed Texrope Drives 14 years ago expressly for textile mill needs, these high efficiency drives have been sweeping away all opposition. They have proved themselves . . . in the field, under all conditions.

And no wonder—for Texrope Drives do not slip or jerk . . . do not break fragile yarns on the frames . . . eliminate spattering of oil on goods . . . keep production and maintenance costs to a minimum. These are important factors to you as a mill operator or owner . . . factors that will help you STOP TEXTILE DRIVE TROUBLES!

New Compound Gives Longer Life

That's why you should find out about Texrope Drives . . . how these modern transmission belts are made of a new, special, cool-running rubber compound to give you longer life . . . made with "wedge" construction for greater efficiency (up to 98.9%) . . . exactly matched into sets for sharing the load together and even wearing.

TEXROPE DRIVES DON'T SLIP or jerk . . . don't snap threads . . . cost less to maintain . . . reduce yarn breakage . . . cut power bills. In this textile mill, drive troubles are virtually eliminated by using Allis-Chalmers Texrope Drives and Quick-Clean Motors.

Get in touch with the trained engineer in the district office near you. He has interesting facts to tell you . . . that will help you cut costs. Call him today. Or write direct to Allis-Chalmers. A-1179

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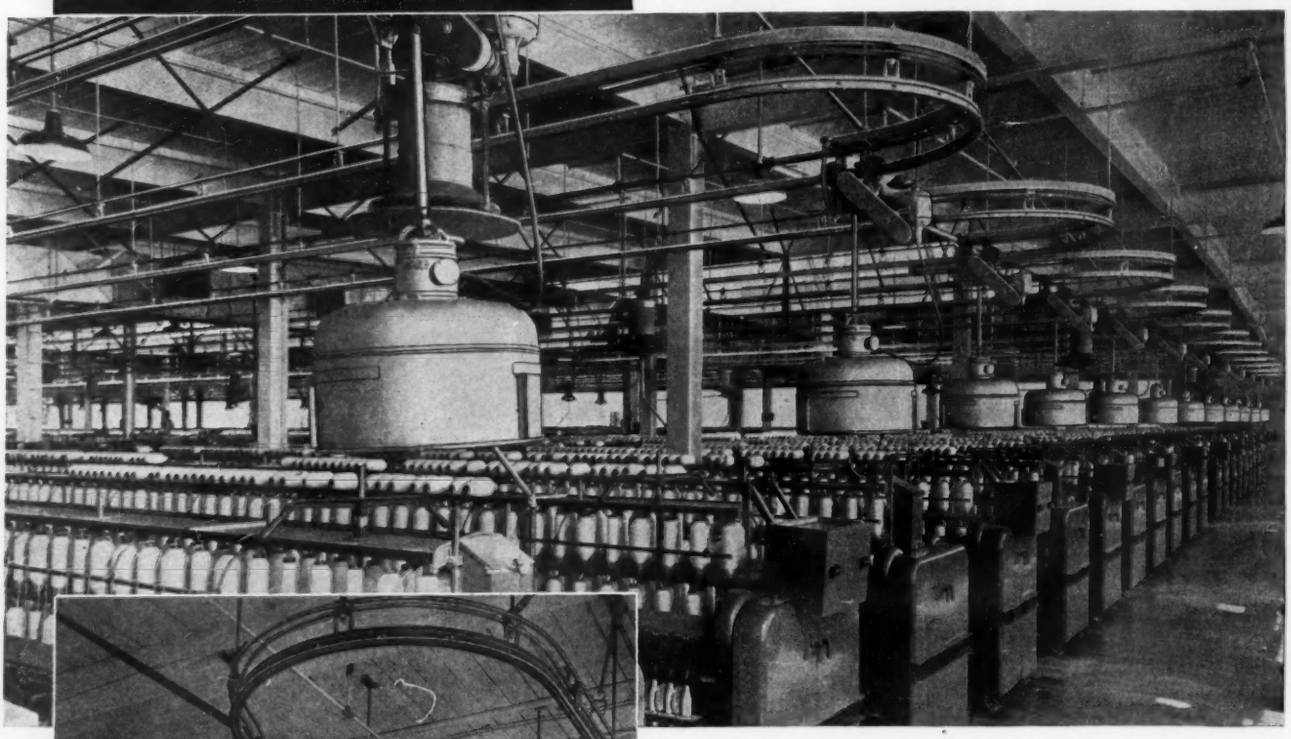

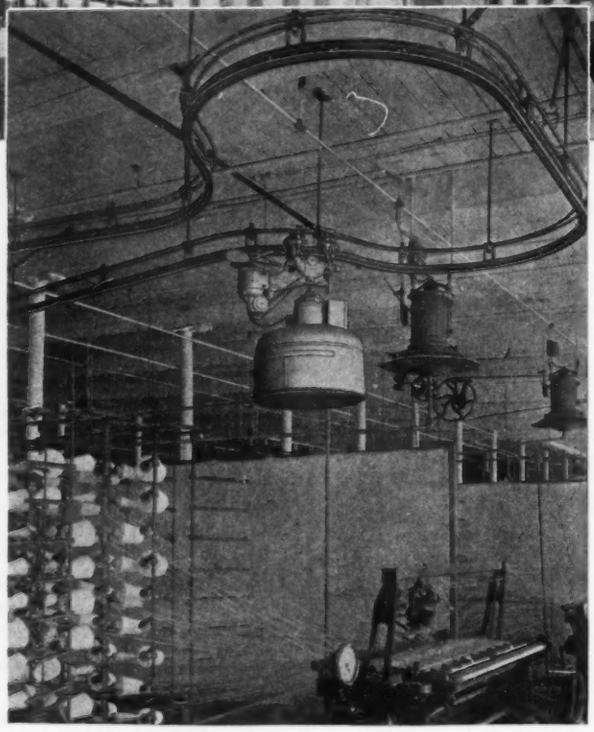

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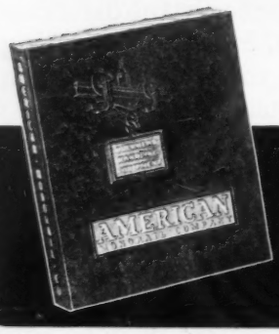

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Textile Industries

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IN THIS ISSUE

General and Technical—

The Textile "Designer", by Emil Zerk ---- 43
The Breaking Strength of Sized and Unsized Yarn ---- 45
Blending Staples to Increase Strength ---- 46
Controlling Crimp in Square Woven Duck ---- 48
Spinning Room Practice (Article 8), by Horace L. Pratt ---- 49
Surface Active Agents, Their Applications in the Wet-Processing of Textiles, Part III, by Andrew J. Kelly ---- 53
The Rayon Industry ---- 56
Slubber Production Factor, by E. G. Field ---- 58
Cotton Consumption Council Plans Promotion Program ---- 60
Carding and Spinning Subjects Discussed at Spartanburg ---- 61
Mid-State Safety Council Meets at Durham ---- 62
Spun Rayon Is Subject of ASME Philadelphia Meeting ---- 63

Current Textile Topics—

Kibler Heads AATCC South Central Section ---- 62
Current Topics: Sound mill operations 66; Finished goods strong point 66; World cotton markets strong 66; New England mill situation 67; High cotton consumption 67; Notes of the mills 67.
"The Situation" as Seen Across an Executive's Desk ---- 68
Comment on the Cotton Market ---- 72
New Equipment and Materials ---- 74
Personal Notes about Men You Know ---- 80
An Old-Timer Says— ---- 83
Domestic Rayon Stocks ---- 85
Miss Hill Receives Award of Merit ---- 85
What the Southern Mills are Doing ---- 96
Textile Publications ---- 96

How Other Men Manage—

Picker Speeds and Settings ---- 87
Improving Rolls in the Card Room ---- 88
Reducing Impact in Leather Rolls ---- 89
Some Comments on "Average Count" ---- 89
Reverse Twist Yarn Sticks to Cylinder ---- 90
Placing More Stock in Card and Drawing Cans ---- 90
Spooler Room Talk ---- 92
The Varnishing of Jacquard Harness ---- 94

Knitting Section—

Treating the Water Supply ---- 101
Machine to Grind Worn Jacks ---- 102
Belts—Crossed or Straight ---- 103
Soft Drink Dispenser ---- 103
Operating and Fixing Model ES Machines, By Emmett Starr ---- 106
Multiple or Single-Job Finishing Operations ---- 107
Picot Jacquard ---- 108
Loose Lines in Seamless ---- 111
Verge Plates ---- 112
Cause of Menders ---- 112
Trends and Highlights of the Knit Goods Markets ---- 114
Forecast ---- 116
Nylon Yarn Production Starts at New Plant ---- 118
Checking on Supplies ---- 120
Single or Ply Yarn for Reinforcing ---- 120
Trends—Yarn Markets ---- 122

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SHORTS AND REMNANTS

Cross-Index of 1939 COTTON Available

A complete cross-index of all articles and discussions published in "Cotton" during 1939 is now available to any reader who requests it. This cross-index is invaluable in locating any article, on any subject, published during the year, and is particularly useful to anyone possessing a complete file of the 12 issues of the magazine published during the year.

◆

Request to Reprint

"We would like your permission to reproduce for our members and Power Transmission Club members, for distribution without charge, the article entitled, 'Belt Slippage and Production', which appeared on page 119 of the November issue of COTTON. We will, of course, give due credit to your magazine for the article."

FRANK A. FORD
Secretary,
Power Transmission Council, Inc.,
Boston, Mass.

(Permission gladly granted.)

◆

Requests for Articles

"During the year 1938 you published a series of articles "A Description and Study of Textile Printing", in five installments. We have Articles 1, 2, 3 and 4, and would appreciate a copy of the fifth article."

S. J. BRISBIN COMPANY
75 West St.,
New York City.

◆

Pom Poms

"Since your company is familiar with all textile machinery builders and the products of these machines, we believe you are in a position to furnish us some information pertaining to the Pom Pom samples attached. We will appreciate your sending us the names of the manufacturers who build machines to produce pom poms similar to this sample."

A. U. PRIESTER, JR.
Process Development Dept.,
Callaway Mills,
LaGrange, Ga.

(It is our understanding that most Pom Poms are made by hand. However, the Consolidated Trimming Company, New York City, and also a Chicago concern, are manufacturing Pom Poms on a machine manufactured by Joseph Smith's Sons, Westwood, N. J.)

◆

Wool Scouring Supplies

"We have a new industry in Texas—wool scouring. I wonder if you will give me the source of supplies for this industry? We carry a complete line of textile mill supplies, and would like to add some wool scouring necessities."

W. A. BRALEY
Southwest Supply Co.,
Dallas, Texas.

Thanks, Mr. Jaquith

"I read your magazine carefully every month and cannot see how you can put it out at such a low price. I feel that one copy is worth at least your price for a year's subscription."

HORACE J. JAQUITH
Minot, Hooper & Co.,
New York City.

◆

Does Anyone Know?

A subscriber has asked us to tell him how many cotton slashers there are in operation in the United States; *and* how many of these are operating on colored warp yarns. This one baffled our experts, as well as several authoritative sources which, we felt, would surely know.

Any reader with any authentic information on either or both parts of this inquiry is cordially invited to help.

◆

TEXTILE CALENDAR

The textile division of the American Society for Testing Materials (Committee D-13) will hold its next meeting in Charlotte, N. C., March 13 to 15, 1940. We welcome this important organization to its first southern meeting in years, and urge attendance by southern mill men.

The dates for the 1940 annual convention of the American Association of Textile Chemists and Colorists, have been set for October 18 and 19. Headquarters will be at the Hotel Commodore, New York City, and the meeting will be under the auspices of the New York section, with Patrick J. Kennedy as general chairman of arrangements.

◆

Rayon Sign

This attractive sign of the "Crown Rayon" trademark, mounted on the Marcus Hook (Pa.) Plant of American Viscose Corporation, identifies "The World's Largest Manufacturer of Rayon Yarn". The company has seven plants, in Marcus Hook, Roanoke, Va., Lewiston, Pa., Parkersburg, W. Va., Nitro, W. Va., Meadville, Pa., and Front Royal, Va. They manufacture viscose and acetate filament yarn, and cut staple fiber. The annual production is approximately 106,000,000 pounds of yarn and fiber.

Modernization and Maintenance Issue

The February issue of "Cotton" will, as usual, be devoted to the general theme of Modernization and Maintenance. Our annual treatment of this important subject provides a continuing record of progress in the several branches of the textile industry. There will be a pictorial portfolio of textile views; descriptions of outstanding new plants completed during the year, and other features; but special emphasis will be placed upon the vital subject of maintenance procedures. It will be an issue of special note warranting careful study and filing for later reference.

◆

More About Spun Rayon

"Please accept my sincere thanks for the index of spun rayon articles. This is very helpful to me in locating certain articles in your fine magazine COTTON. I have been a subscriber to COTTON for several years and consider it as a 'top-notcher' and always look forward to seeing each issue arrive."

J. CARL PAGE
Marshall Field & Co.,
Leaksville, N. C.

"We desire to acknowledge and thank you for the list of articles on spun rayon, from COTTON. Inasmuch as we have all of the issues of COTTON referred to, we will have no difficulty in locating these articles, and wish to express our appreciation for your courtesy in this matter."

O. H. TOUSEY
Penick & Ford, Ltd., Inc.,
Cedar Rapids, Iowa.

(We have available a list of about 30 articles on spun rayon, published in COTTON during recent years. While we cannot supply clippings of the articles themselves, the listing, showing the issues in which the articles appeared, may be secured upon request.)

◆

Definition of Wagon Duck

"Will you kindly furnish us with the details of construction of goods commonly referred to as 'wagon cover duck'? We would like to be advised as to what the usual widths and weights are, counts, and whether yarns are single ply or double. Also whether the warp yarn is sized."

MILL TREASURER

(The definition for wagon-cover duck is as follows: "A flat duck (usually double filling) made in wide widths, 48-inch to 90-inch, based on weights of 8, 10, and 12 ounces to 29-inch width." There is no standard count for wagon-cover but it will average approximately 89x32. The warp is single and drawn two ends to the eye with plied filling.)

◆

Water Repellent Cloth

"I am interested in water repellent cloth, suitable for tents, bed rolls, and clothing with the quality of being wind-resistant."

L. W. PADDOCK
127 Lorenz Ave.,
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REG. U. S. PAT. OFF.

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Formerly, the sodium hypochlorite solution quickly attacked the metal linings of these bleaching machines. Constant repairs added heavily to maintenance. Goods spotted and required reprocessing. Cleaning was a difficult, time-consuming task. And work interruptions materially reduced the output per machine. But the machine pictured above supplied the solution to all these costly, troublesome problems . . . for it's now lined with ENDURO Stainless Steel! "After steady operation," reports the chemist in this plant, "our ENDURO bleaching machine is still in its original, spotless condition. Highly corrosive solutions have not affected the ENDURO lining in any way. Goods passing through the machine slides over the smooth surface without danger of spotting or tearing. As a result, output for the machine has increased substantially because cleaning now takes but a fraction of the time, and there never are any work interruptions or 'time out' for repairs." It's service like this that should prompt you to investigate ENDURO thoroughly, whether your need is tanks, jigs, dry cans or laboratory equipment. Let us send you all the facts on ENDURO, as well as on other Republic metals specifically engineered for textile plant usage. Write Republic, Dept. CO, at Cleveland today. Republic Steel Corporation, General Offices: Cleveland, Ohio; Alloy Steel Division, Massillon, Ohio. *Reg. U.S. Pat. Office

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ENDURO *Stainless* STEEL

COTTON
SERVING THE
Textile Industries

January 1940 Vol. 104 No. 1

THE TEXTILE "DESIGNER"

By Emil Zerk

THERE IS considerable doubt in the minds of men in the fabric designing field as to their function and their proper place in the conduct of the mills' program. Many times the terms "designer", "fabric technician", and "stylist" are used interchangeably, which is quite improper in my opinion. In the following paragraphs I shall try to define the duties of each of the foregoing, and his relation to the production department of the textile mill.

First, the job of the designer, fabric technician and stylist must be analyzed according to their function in relation to the manufacturing plant, the sales of the products, and the market. Only when these terms are thoroughly dissected in the light of their function with other groups can we really understand what they mean. The terms apply as strictly to different types of work on different levels as do the terms superintendent, general superintendent, and manager apply to the management of the mill. And only when this is understood by the employers of these professional people (the designers, fabric technician and the stylist) can results be expected in proportion to their duties. All of these terms may embrace an experience and training in one or more of the others and must be applied in the light of the individual experience and personal background.

The Fabric Technician

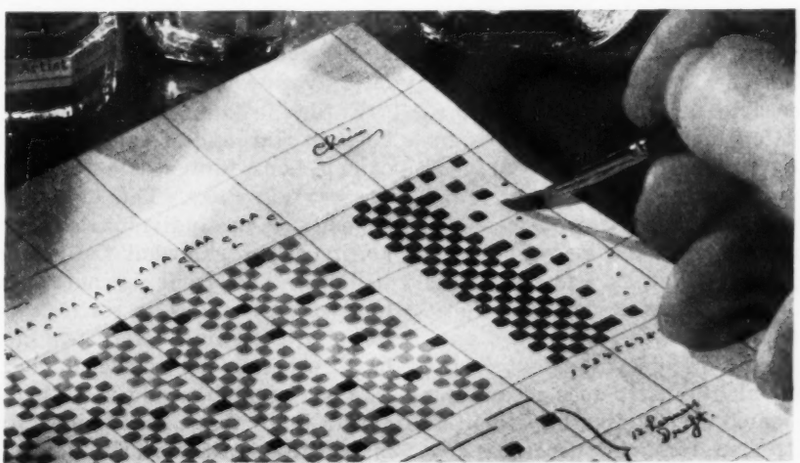
The term "fabric technician" is applied by certain people in the fabric field to professional advisors who aid in introducing new products. This would mean a practical mill-trained person that is thoroughly grounded in the mechanics of weaving, designing, finishing and marketing of various fabrics. Usually these are people with specialized experience in one or two specialty groups of fabrics and a general knowledge of some others. In some fancy mills this function is often vested in some competent official. In others it may be an entirely new function that cannot be assumed by any official, but by someone that is brought into the organization especially to carry on this work.

The functions of the fabric technician may be expanded in the direction of costs, mill engineering, purchase of machinery and the layout of a new unit—and the selection of personnel to man such a unit. More usually the fabric technician spends the major portion of his time in working up new lines as to proper price and markets with consideration for the styling of the product. He would be expected to obtain the proper personnel to assist in carrying on his work.

The big jobbing houses in New York usually retain the services of men highly trained or experienced in their lines to assist in proper specification and purchase and merchandising of their products. Here the term "fabric technician" is correctly applied because this is the work of a highly technical and specialized character.

This person may also act as a general purchasing agent and product inspector, even to the point of visiting the producing mills to work out problems.

In other instances the fabric technician may be called upon to manage a designing office and a unit producing samples for the new products under consideration. This may call for the handling of a number of designers and helpers, and direct contact with and the co-operation of a stylist that is di-



Courtesy Tennessee Eastman Corp.

rectly in constant contact with the market. In addition, there should be a group of people under the management of a good overseer of weaving to produce the samples. The technician may find it necessary to employ various specialists on work that is foreign to his training and experience for varying periods. He must be able to obtain quick insight into their work and to direct it into the proper channels without lost time.

The job of fabric technician calls for unusual training and experience both of a practical and theoretical nature. Such a person should certainly be placed in a responsible position so that he may command co-operation, and he could well and profitably be taken into the official family and given a title and responsibility commensurate with the size of the job that he is undertaking. Unfortunately, many mills lose the value of the fabric technician by so restricting his powers that he does not secure proper co-operation to put over his program.

It is my opinion that to direct a change-over or new program that the mill is instigating, the fabric technician must be placed in such a position that he can present his case on equal grounds with the official that may be opposed to the method of carrying on work that has to be done.

The Fabric Stylist

The term "fabric stylist" in its strictest sense is applied to a person in the fabric field that styles the various productions that are manufactured. It may be necessary that this person be highly trained in art work and merchandising, or it may apply to some person that has had considerable contact with the market in a particular field. Much depends on the type of product, but this man must have a good conception of the grouping, selecting, pricing and balancing of a line of products in the light of the market requirements.

Work of this character is often assumed by someone connected with the sales division of the mills, or by a highly trained specialist such as an artist, who is experienced in styling fabrics for the market that the mill is interested in. This function is best carried out by a specialist that is competent to size up the market and to build up a program accordingly. A stylist should be able to direct the styling of the product with the assistance of the fabric technicians or designers that are located at the mill.

The fabric stylist's work should be suggestive, selective and critical in nature, and he must be a person of good taste and with sensitive reactions to what is needed. It is essential that he have experience in and contact with the market. Thus the necessity for him to be located at the markets.

Very often this work is carried on by women artists with little or no experience in the technique of manufacturing, but who know the use of colors and can work out pleasing fabrics that fit the needs of the latest market. Their value is chiefly in their market sense and their knowledge of what is new and what may be best sold.

The Fabric Designer

Although the use of the term fabric designer is very general, we refer first to the person trained in the technique of forming designs on paper and working out all the technical details of specifications needed for the manufacture of the fabric. This, of course, includes the point paper design needed with drawing-in drafts and chain drafts necessary for the manufacture of the product. In a large mill the head designer may outline the work and turn it over to an assistant to complete the details, while he concerns himself more with working out shades and yarn combinations to get new or desired effects.

The designer should have considerable experience with the production machines, such as spinning frames and looms. Only by understanding the theory and practice of the many machines and processes can he suggest experiments that lead to new ideas and treatments of ideas. This does not mean that he must be a good overseer or superintendent or the equivalent but it does mean that he must be thoroughly familiar with manufacturing processes.

In addition he must act as a censor and pass on the practicability of certain processes of fabrics. This is a most valued function of experienced designers especially where they have been overseers or superintendents.

In most designing departments there are many grades of designers depending on their personal experience and training and accomplishments. It is a long, hard, grinding type of work and to some extent routine but largely intensive in character and application.

The designers at individual mills that have started from technical school training in designing and manufacturing have an excellent opportunity to become fabric technicians and later to direct the change-over of processes or the development of new ones, and to be delegated with the responsibility of directing a general program of mill change. If art training is lacking then this can be offset by experience in marketing and designing certain lines of goods. It is, of course, desirable that they get all the practical mill experience that their time will allow.

Some designers have found that they are better fitted to run a designing department and/or direct a sample unit in the manufacture of the new products, while others find they are better suited to contact the markets. The first will develop into the technician and the second perhaps into the stylist.

Since there is no set procedure or straight road to the top of the ladder in this profession, people from many walks of life might enter this field due to its interest to them or to their aptitude for the work. Certainly the sense of creative accomplishment ever stimulating the designer has its reward.

Until the designer has had a large background of experience he cannot hope for great returns in the way of salary. This of course depends on the individual and his ability as to just what the status will be. The field is not very large except in certain textile centers and then only a very few can be absorbed in the work each year. The beginner should look long and carefully before he decides to make this his life's work.

The Breaking Strength of Sized and Unsized Yarn

By Edward Wood

WE FREQUENTLY check the weight added to warp yarn at the slasher as well as the increased breaking strength due to adding this sizing material. By placing a little creel holding four bobbins behind the last section beam, we are able to feed four extra ends through the slasher. These are taken off the loom beam at the slasher front by means of a small cloth covered roll four inches in diameter and twelve inches long. Small bolts driven into center of each end of this roll will allow a wire guide to hold the roll in friction contact with the yarn on the loom beam. This also turns the roll at exactly the right speed to take up the yarn as it comes from the drag roll. Allow two or three 120-yard skeins in addition to the yarn on the cylinder while standing to run on the roll.

Allow the bobbins of yarn and the yarn on the take-up roll to condition at 65 per cent relative humidity and 70 to 80 degrees Farenheit for several hours before skeining off both yarns for weighing and breaking. It is a simple matter to compute the percentage of increase in weight and the percentage of increase in break.

In making the test from the bobbins of yarn, we do not run the unsized yarns over the cylinders along with the sized yarn as we particularly wish to secure a comparison before and after sizing to show the effect of slashing. The unsized yarn is reeled directly off the bobbin the same as the spinning department would do in making their breaking strength tests.

As a general rule the yarn is not taken from the loom beam for skein break tests as this involves considerable waste. If 120 yards of several ends are removed from a loom beam, this would cause 120 yards of several thousand other ends to be lost because the pattern would not be to specification.

It is our opinion that there is little harmful stretch introduced between the loom beam and the delivery roll of the slasher as the warp is sized and dry. With anything like careful attention at this point, the tension introduced packs the inner layers on the loom beam a little tighter, keeping the ends tight on the beam until the warp is unwound on the loom, where each end regains its original length—similar in action to a tightly wound elastic band.

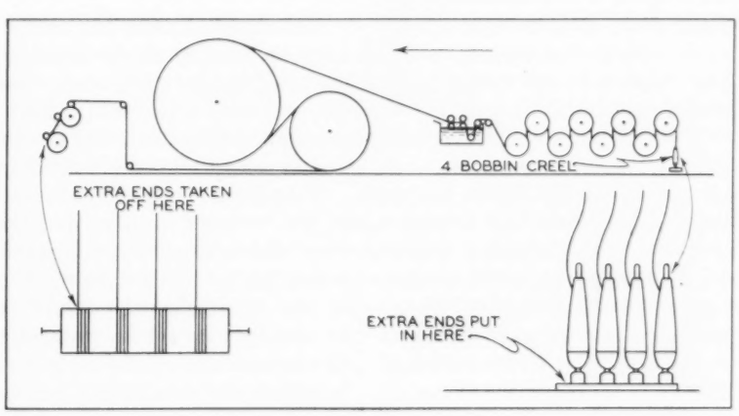
The most harmful stretch occurs between the squeeze rolls and small cylinder while the yarn is wet, and when it dries stretched, the yarn cannot regain its shorter length. On print cloths, the warp is controlled at the slasher with from 1 to 1½ per cent stretch.

We have found that 15 per cent increased weight in the warp yarn should give about 23 per cent to 25 per cent increased breaking strength. These figures will naturally vary some with different size formulas but not much. If the size mix is properly cooked and not over cooked in the size box, fairly consistent results may be expected.

Heavier yarns than 30s give slightly smaller breaking strength increases while lighter yarns up to around 45s to 50s give slightly greater breaking strength increases. From this we assume that a good part of this breaking strength increase is due to a better binding of the fibers themselves rather than the actual breaking of the starch film.

We have, on one or two occasions, reduced twist on the warp in order to produce a better face, particularly in low count broadcloth where their highly twisted ends stand out like reed marks. However, as a rule this does not have to be compensated for in the sizing, in fact, this might be the wrong thing to do. If the cloth weights were set up for a certain percentage of size, changing this enough to affect the breaking strength or twist would probably throw the cloth out of balance with the existing yarn numbers.

In some instances, we find that a decrease in twist will increase the breaking strength of the warp yarns in the cloth. It seems that in the higher pick and sley goods where the yarns are tightly bent around each other, the effective twist in the yarns is increased; something like rolling a newspaper into a tight roll then attempting to bend it, it usually breaks. For this reason if the yarn is spun with a little less twist than that giving the best skein breaks, then when this twisting action takes place in the cloth the increase in the effective twist will bring each thread to its maximum strength in the cloth where the ultimate test is anyway. This may sound contrary to general ideas along this line yet by specific tests we have found this to be true.



Blending Staples To Increase Strength

A RECENT INQUIRY to the editors of COTTON had reference to mixing of cottons of different staple lengths. The inquiry in full is as follows: "I have noted at various times references to mixing of cotton of different staple lengths in order to obtain a desired yarn breaking strength, but there has been no detailed information on the subject. How far can this mixing of staple be taken without affecting the smoothness and quality of the yarn produced? Could this method of mixing staple lengths be used in the manufacture of high grade prints without affecting the quality of the cloth?"

This question was referred to several mill men and their answers are as follows:

Mill No. 1.—We have always been of the opinion that there are very few benefits which might be derived from mixing staple lengths. It is true that we have in the past mixed staple lengths but only to widen our field in cotton purchases.

We did not find any appreciable change in tensile results when less than 25 per cent longer staple was used in any given mix. The evenness of the yarn is not improved by mixing of staples and consequently is to be avoided.

In no case would we consider mixing lengths where the maximum variation was longer than 1/16-inch. In other words, we would consider mixing 10 per cent 1 1/16-inch cotton and 10 per cent 1-inch cotton with 80 per cent 1 1/32-inch cotton.

In summing up the whole matter of mixing staple lengths it has been our experience that mixing staples should be avoided as much as possible and the only justification we have had for mixing staples was to widen the field for the purchase of our raw cotton.

Mill No. 2.—It is the aim of practically all mill men who are trying to produce a strong uniform yarn of good quality to select cotton of uniform fiber length; in other words, cotton of good character. This practice is as old as the use of drawing rolls in the textile industry, the reason for this being that the drawing rolls have a fixed setting and the more uniform the fiber lengths the better the fibers can be controlled, which results in uniform yarn of maximum strength, assuming that all other conditions are satisfactory.

We realize that all cotton contains a wide range of fiber lengths. The cotton classed as one-inch staple will not usually have more than 20 to 35 per cent of the fibers strictly one-inch range and may have a very much lower percentage. The longest fibers may be as much as 1 3/16-inch in length and the shortest ½-inch or even less. This, therefore, means that in all cotton there is a wide range of fiber lengths to handle.

In view of the foregoing it is undesirable to attempt to mix staple lengths to increase the breaking strength. It would be much better to increase the length of the entire mix a lesser amount or improve the processing in the mill to obtain the desired results.

The writer has in the past mixed cotton of 1 1/32-inch and 1 5/32-inch or a difference of ⅛-inch in staple length. This particular mix contained 75 per cent of the 1 1/32-inch and 25 per cent of the 1 5/32-inch. This roving was spun on long draft frames but was run on conventional processes in the card room consisting of two processes of drawing equipment with metallic rolls and three processes of fly frames.

The finished yarn was not as uniform as yarn made from one staple length. The skein breaking strength did, however, increase about 1½ per cent. All rolls in the card room had to be set for the 1 5/32-inch.

This gives you a general outline of the writer's opinion and experience with mixing staple lengths. We would advise against doing so since in our experience the improvement in strength is not in proportion to the percentage of the longer staple length in the mix. In other words,

the mill will not get as much for their money spent on cotton by mixing a longer staple with a shorter one as they would by increasing the average length of the entire mix a lesser amount. If there is any other information we can furnish we will be only too glad to do so.

Mill No. 3.—The question of mixing different staple lengths has been a subject of debate with us at various times but I am sorry to say that we have no definite figures to show. What we think of this is mostly from past experience and some theory. Since there is considerable variation in staple length even in one well selected bale, it is impossible to have an absolute uniform staple. In selecting cotton for the mill, it is important to select that which has a minimum of short fibers. The more uniform the staple, the higher the breaking strength and the more even the yarn will be. This is well illustrated in combed yarn mills where a great percentage of the short fibers has been combed out.

The reason that the short fibers reduce the breaking strength is because there is less entwining of the fibers. The breaking strength is not only according to the strength of the individual fibers but also because of the drag of one fiber against another. Looking at a cotton fiber under a microscope it will appear as a flattened tube with barbs along the surface. This characteristic of the cotton fibers causes them to lock together and resist any slipping apart. The ease with which the fibers slip apart determines to a great extent the strength of the finished yarn.

In ordinary drafting processing, the rolls must be set slightly farther apart than the average length of the longest fibers of the cotton being run. This is apparent since a closer setting would break the longer fibers. With a setting of this kind, the short fibers merely float through during the drafting process with no regularity of position. Thus under ordinary conditions, a mixing of staple lengths is impractical since the rolls would have to be set for the longest staple, leaving a higher percentage of fibers going through with no control.

With the installation of long draft equipment there are greater possibilities of mixing staples of different lengths. This is because all the systems of long drafting have as their basic principle the better control of the short fibers.

Also when long draft installations are made, there is usually an elimination of one or more processes of drafting. There is usually less total drafting and less doubling. It is very easily demonstrated on the sliver tester that the card sliver contains less inch variation than at any succeeding process. It is also easy to show that any doubling of the roving improves both the inch and skein variation but that the additional drafting necessary because of this doubling, more than offsets any advantage in inch variation given by the doubling. It seems that inch variation is caused mostly by drafting. It is then obvious that with less total drafting and better control of the floating fibers during drafting, we increase our possibility of using staple of a reasonable variation.

In our mill we have, since installing long draft equipment, run very nicely, mixed staples that would have been impracticable to have run with the old equipment.

In comparing the breaking strength of the yarn and the cotton mix, it has also been apparent that the strength went up as the amount of longer staple was increased. This is with no change in grade. We have mixed staples with as much as 1/16-inch difference.

As far as the evenness or smoothness of the yarn is concerned, we believe that a uniform staple would give the best results since it would be impossible to blend mixed staple or control it during drafting, so well that it would not affect the smoothness.

Mill No. 4.—My personal experience in running mixed staples has been rather limited. Occasionally, we have purposely mixed staples with the variation of 1/16-inch or a little more, in order to improve the breaking strength of some of our yarns made with the shorter staple. For instance, where yarns are regularly made with 7/8-inch staple you may very definitely expect an improvement in the breaking strength by using some 15/16-inch cotton along with the 7/8-inch.

The advent of long draft roving and spinning has enabled the use of cotton with more variation in staple length than was possible with the old regulation equipment. In fact there seems to be more variation, particularly in the shorter staples now than we formerly had, probably this is due to the fact that there has been an effort made to improve the staple length. This has resulted in some farmers growing some cotton of 7/8-inch staple, and other cotton inch or better, and they haven't been successful in keeping the staples separated.

I would say that staple length of not too wide a variation could be mixed satisfactorily and used in the manufacture of high grade prints. However, from a practical view, it seems that you would get more uniform yarns and better breaking strength with an even running staple, rather than from the same average length made up by mixing varying staples, which would probably cost just about as much as the former.

Mill No. 5.—We have run a large production of mixed staples through our mill in various qualities of cotton, the widest variation running 1/8-inch where 1 1/32-inch cotton was mixed with 1 1/8-inch. We do not recommend this, but if careful blending of the cotton is done, a successful job of manufac-

turing yarns can be performed.

On print cloth yarns I would not recommend the mixing of staples with a variation of more than 1/16-inch. I think this is entirely practical if the mill has a good blending system.

If yarns are needed for extra high grade goods like oxfords and chambrays and high grade knit goods, the more uniform the staple the more uniform the inch-to-inch variation if the roll settings are adjusted properly.

A lot of our ideas about mixed staples have been thrown out the window with the advent of long draft roving and long draft spinning. If the conventional type equipment in both roving and spinning processes is used, I would not advise any mixing of staples.

Mill No. 6.—I have never mixed purposely any cottons of different staple lengths, but I am mixing at the present time some 1 9/16-inch spun rayon staple with 1-inch cotton staple, using 50 per cent of each.

Our roll settings when using this blend of rayon and cotton are:

Drawing
1st to 2nd 1¾-in.
2nd to 3rd 1 13/16-in.
3rd to 4th 1 15/16-in.

Slubber
1st to 2nd 1 11/16-in.
2nd to 3rd 1 15/16-in.

Speeder
1st to 2nd 1 11/16-in.
2nd to 3rd 1⅞-in.

We run a 60-grain drawing sliver and a .60 hank roving on the slubber, with 1.75 hank roving on the speeder. This is based on a 50 per cent mix of 1-inch cotton with 1 9/16-inch bright 3 denier cut staple rayon. The spinning settings are 1 9/16-inch between the front and middle and the middle and back rolls.

Our break based on 25s is slightly better (about 7 per cent) than on all-cotton but after running this mix I can't honestly say the evenness is as good as the all-cotton 1-inch staple. We have mixed some 1 3/16-inch cotton with 1½-inch 1½ denier rayon and got a very even yarn but that was on finer numbers made using a lightweight middle roll on the spinning.

Controlling Crimp
in Square Woven Duck

THE FOLLOWING is an inquiry received recently by the editors of COTTON:

"We find that when making square woven duck to be utilized in tires, it is practically impossible to get the desired amount of crimp if the specification width has to be maintained. We would like to know what determines filling crimp, presupposing that the cloth has always to be the same width. We maintain that the width of yarn in the reed determines the filling crimp; e.g., a cloth woven 32 inches in the reed and measuring 30 inches in the cloth will have a 6.66 per cent crimp.

"Is it possible to alter the percentage of crimp by any means without varying the width of the cloth? We have seen it stated that "the length of the filling in the cloth is not the length of the filling in the reed as this particular cloth is woven tight and pulled down

"In our opinion the length of a pick must always be equal to the reed width as, when the reed touches the fell of the cloth, the filling lies taut to the full width of the yarn in the reed."

This inquiry was passed along to two mill men whose plants are running this type of fabric, the first of whom replied:

"To obtain a definite amount of crimp in relation to a fixed width of fabric, we change the width at the reed. If the crimp needs to be increased, we lower the spread, and if decreased we increase the spread. If the warp count can be varied a little, the crimp can be changed a small amount either way by adding or taking out a few ends."

The second mill man answered as follows: There is very little that can be done toward definitely controlling the filling crimp in any fabric, unless the desired crimp is taken into consideration in working up the original construction. In other words, the weave, twist, count and the yarn numbers will control the major portion of the crimp percentage. I think this can best be explained by making the following points:

1. The higher the sley, the greater the filling crimp due to more interlacings, and vice versa.
2. The coarser the warp yarn, the greater the filling crimp due to the filling having to bend around the coarse warp yarn, and vice versa.
3. The softer the twist, the easier the yarn is to bend, therefore the softer the filling twist the greater the filling crimp, and vice versa.
4. In planning the weave, the greater the number of interlacings of filling with warp, the greater the filling crimp, and vice versa.

The foregoing factors very nearly control the filling crimp, however, the filling crimp can be changed to a small degree by the following mechanical adjustments on the loom:

1. Tension on the warp causes the warp threads to run tighter and to be harder to bend, therefore, more bending by the filling, which causes more filling crimp, and vice versa.
2. The relative warp and filling crimp will vary with the cover on the fabric. Raising the whip roll results in increased warp crimp and decreased filling crimp, and vice versa.
3. The closer the sand roller to the fell of the cloth, the less the opportunity for contraction in width before the cloth is wound up, therefore, the less filling crimp.

From the foregoing, you can see that no definite rule can be given for controlling the filling crimp. This is a feature that must be given special consideration on each individual fabric as the details of the construction are worked out.

Spinning Room Practice

By Horace L. Pratt

Article 8

• THIS article, the eighth in the series, takes up lubrication, testing, calculations and production control in the spinning room. The series began in the March 1939 issue and was continued in the April, May, July, August, November, and December issues. Article Nine, the concluding chapter, will appear in the February issue and will cover spinning room maintenance. If you would like to have all of these articles made availab'e in book'et form for a nominal price, write to the editors.

IN SOME of the other articles of this series we have discussed phases of lubrication with respect to the different units of the spinning frame. We believe the reader will agree that sufficient importance is attached to the subject of oiling to repeat some of the things that have already been said and to sum up the discussions under one heading.

For the purposes of discussion we are dividing lubrication into four factors which we consider pertinent to the subject, viz, *the oiler, the oils, the containers* and *the oiling schedule*. These are not necessarily in the order of their importance, but this arrangement will suffice for our purpose. This discussion, with modification, would be applicable to any department in the mill.

The Oiler

We have already expressed our views in this connection in a previous article, but to repeat, we share the opinion of many mill men that the oiler is a most important individual in the line-up of the spinning room. In some mills the section men do the oiling. The theory is that the section man has to repair or replace any parts worn out or damaged because of the lack of oil and as the result he will give the oiling the attention it deserves.

The general practice, we believe, is to use *regular oilers* who also do the overhead cleaning and carry out waste. Overseers of spinning who realize the importance of correct oiling believe that well trained oilers will give the machines better attention than men with a multitude of other duties such as the section men have. Whatever plan is used the oiler should be paid in proportion to the service he renders. We firmly believe that a good oiler will earn his wages in oil saved, savings on repair bills, production gained and improved quality of yarn. A careless oiler will spoil yarn by allowing oil to drip from the can onto the bobbins of yarn, or he will put too much oil in the roll stands or on the saddles so that the excess oil will run out on the rolls, staining the yarn and ruining the roll coverings. A good oiler is not only careful not to let oil drip on the yarn, but he also puts just enough oil for the purpose and tries not to put so much that it will run out of the bearings getting all over the frame and on the floor. He is also careful not to spill oil on the floor around the oil tanks. These are just some of the ways that a good oiler proves his worth.

Parts of the spinning frame that may be lubricated with high pressure systems could well be so fitted. When these systems are employed the lubrication schedule is reduced and there is much less danger from lubricants being thrown into the yarn.

The Oils

It is not the purpose of this article to sell oils, yet the spinning room is no place to experiment with cheap, low-grade oils. Buy good oils from reputable oil people who will maintain a uniform high quality. It is important that the right type of oils be bought for the various units of the frame and that the oilers understand where each is to be used. Oils for the spindles will be a light oil to permit the very high speeds required of the spindles. On the other hand the oil for the rolls will be a much heavier oil, one that will not run out of the stands quickly and get on the roll bosses where it will stain the yarn, and as has already been stated, tend to rot the roll coverings. If the cylinder bearings are of the anti-friction type a grease will be needed. Then what is sometimes known as a regular engine oil would be used for the bearings in the head of the frame. A study of the correct oils to be used for your spinning frames will be well worth the time and effort.

The Oil Containers

By containers we are referring to the oil tanks, the oil cups and the grease guns. We have found that fairly small tanks give best results; they will require filling more often which tends to keep fresh oil in the spinning room. See that they do not leak, that the strainers are kept in place so that no lint can get inside and that they are kept clean. Each tank should be marked plainly with the name or the number of the oil that it contains. The oilers can be held re-

sponsible for keeping the tanks cleaned and for refilling when empty.

Storage places should be provided for the oil cups and the grease guns and the oilers should be required to keep them in their proper places when not in use. It would be worthwhile to have an oil cabinet for keeping these things, and the grease guns, especially should be kept locked up. At regular intervals the overseer or one of the second hands should inspect these oil cabinets, together with the cups and the guns. Cups that no longer function properly should be discarded. Sometimes the men will cut off the end of the oil spouts allowing the oil to flow too freely. These spouts should be replaced with spouts that have the correct opening for the type of oil being used. *(Greasy waste should under no circumstances be allowed in the oil cabinets, on account of the danger of spontaneous combustion.)*

The Oiling Schedule

As the oiling schedule is important, it must be followed up by those in charge of spinning for it to serve its best purpose. We have found it a good plan to have a few copies of this schedule type and framed. One copy should be put in the office of the department and as many put up in the room as may be necessary to keep those responsible for oiling acquainted or reminded as to just what is expected of them.

Given herewith is a suggested oiling schedule for long draft spinning frames, on coarse yarns. These are heavy frames so this particular schedule would have to be modified for smaller frames on fine work.

Part to be Oiled	How Often Oiled	First Shift	Second Shift
Front Stands—	Every 8 hrs.	Daily	Daily
Front Roll Tips—	Every 16 hrs.	½ Daily	½ Daily
Front Saddles—	Every 16 hrs.	½ Daily	½ Daily
Back Saddles—	Every 16 hrs.	½ Daily	½ Daily
Back Roll Tips—	Never Oiled		
Back Stands—	Every 16 hrs.	½ Daily	½ Daily
Roving Traverse—	Every 80 hrs.	Wednesday of one week	Wednesday of next week
Hank Clocks—	Every 80 hrs.	Wednesday of one week	Wednesday of next week
Big Heads (Includes all gears)—	Every 8 hrs.	Daily	Daily
Cylinder Bearings— (Anti-friction)	Every 3 months	½ First of quarter	½ First of quarter
Builder Motions—	Every 80 hrs.	Tuesday of one week	Tuesday of next week
Lifter Rods—	Every 40 hrs.	Monday	Wednesday
Rocker Shafts— (Wave Shafts)	Every month	½ First of month	½ First of month
Spindles—	Every 160 hrs.	½ Thursday of one week	½ Thursday of next week
Loose Pulleys— (Oilless Bushings)	Every month	½ First of month	½ First of month

It can easily be seen that with two shifts of oilers it is very necessary that someone, preferably one of the second hands on each shift, be responsible for seeing that the oiling schedule is followed and to help the oilers keep straight on *whose* time it is to oil *what*.

Calculations (Draft, Twist, etc.)

Perhaps we do not have anything new to offer in connection with the calculations incident to the spinning frame, yet we find some whose duties require that they be able to do these calculations, who do not seem to understand the principles underlying them.

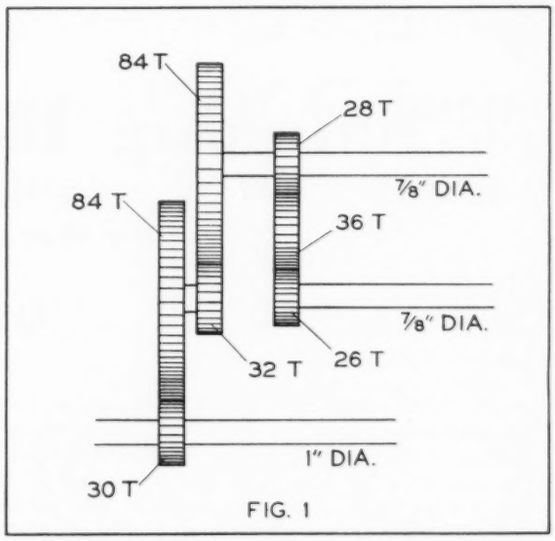


FIG. 1

The *mechanical draft*, or *figured draft* of the spinning frame is the ratio of the surface speed of the delivery rolls to that of the feed rolls. This may differ slightly from the *actual draft* which is the ratio of the length delivered to the length fed, or of weight fed to weight delivered.

The mechanical draft of a spinning frame is figured by means of a problem that, in effect, results in the division of the surface speed of the feed rolls into that of the delivery rolls. The actual draft may be determined by dividing the weight of a given length of the yarn delivered by the frame, into the weight of the same length of the material fed. In this manner corrections may be made to secure the draft wanted.

Figuring Mechanical Draft

In calculating the mechanical draft of a spinning frame we suggest following the stock from back to front. First, consider the roll diameters; it is necessary only to take into account the diameters, although what is wanted is the ratio of surface speeds, for when the diameters of the back roll and the front roll are both multiplied by π (3.1416) to get the circumferences of each, the ratio of the circumferences will be found to be the same as the ratio of the diameters. As the front roll revolves at the highest speed, it will be in the dividend and should be put above the line, while the diameter of the feed roll will be below the line. Next consider the gear on the end of the feed roll as a driver gear and put the number of teeth in this gear above the line, count the next gear as a driven gear and put its number of teeth below the line and so on throughout the train of gears, leaving out any carrier or intermediate gears.

Using the information given in Fig. 1 find the mechanical draft of a spinning frame:

Starting from the back roll the driver gears are the two gears of 84 teeth each, while the driven gears

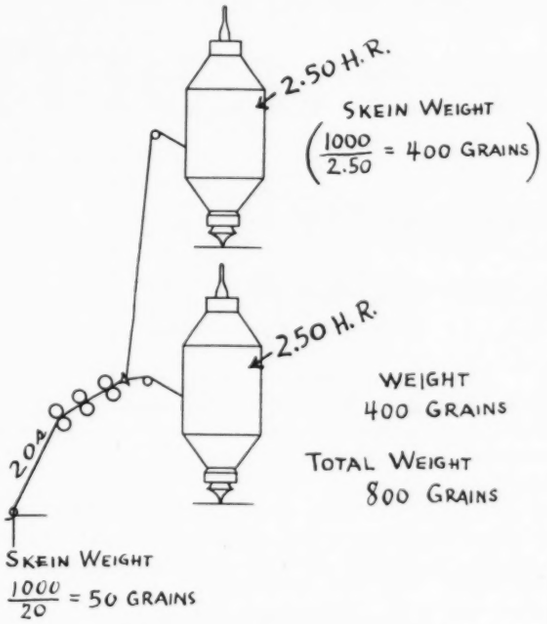


FIG. 2

are the 32-tooth change gear and the 30-tooth gear on the front roll. The back roll is ⅞-inch in diameter while the front roll is 1-inch in diameter. Set these figures down as suggested in a foregoing paragraph:

$$\frac{1 \text{ inch} \times 84 \times 84}{⅞ \text{ inch} \times 32 \times 30}$$

Note: The diameter of the rolls may be expressed in eighths of an inch so the figure "8" above the line and "7" below the line is mathematically correct.

$$\frac{8 \times 84 \times 84}{7 \times 32 \times 30} = 8.40 \text{ Mechanical Draft.}$$

The *draft constant* would be found by leaving the draft gear out of the calculation, or by substituting "Y" for this gear:

$$\frac{8 \times 84 \times 84}{7 \times \text{"y"} \times 30} = 268.80 \text{ Draft Constant.}$$

The draft constant for each make and model of frame should be kept on file in the spinning room office as it saves time in making changes. To use the draft constant:

$$\frac{\text{Draft Constant}}{\text{Draft Gear}} = \text{Draft}$$

$$\frac{\text{Draft Constant}}{\text{Draft}} = \text{Draft Gear}$$

Finding Actual Draft

While there is more than one way of finding actual draft, dividing the weight of a unit length fed by the weight of the same unit of length delivered seems to us to be the most logical, though we will admit that it is not the shortest method. As the skein, 120 yards, is a very common unit of length in the spinning room we find that by using the weight of one skein of the material fed and dividing it by the weight of one skein of the yarn delivered the actual draft of the frame is obtained, and we also find that these results check with at least one other commonly used method.

Fig. 2 is an illustration of two bobbins of 2.50 hank roving being fed into spinning rolls and producing 20s yarn. By employing the yarn constant of 1000 we find the roving to weigh 400 grains per skein:

$$\frac{1000}{2.50} = 400 \text{ grains.}$$

And as two ends are being fed the total weight of the material per skein will be 2 ends $\times$ 400 grains $=$ 800 grains of roving fed. By the same method the 20s yarn weighs 50 grains per skein:

$$\frac{1000}{20} = 50 \text{ grains.}$$

$$\frac{\text{Weight of unit length fed}}{\text{Weight of unit length delivered}} = \text{Actual Draft}$$

Therefore,

$$\frac{800 \text{ grs.}}{50 \text{ grs.}} = 16 \text{ Actual Draft.}$$

The same results can be obtained by multiplying the yarn counts delivered by the number of strands of roving fed and dividing by the hank roving fed:

$$\frac{20\text{s} \times 2 \text{ (ends fed)}}{2.50 \text{ H. R.}} = 16 \text{ Actual Draft.}$$

This method, while entirely correct, is essentially a length proposition, and is not so easy for us to remember as the weight method.

Twist Calculations

Twist calculations are based upon the number of turns of the spindle during the delivery of a given length of yarn. This might be called *mechanical twist* and would differ slightly from the actual twist. On account of slippage and other mechanical irregularities, the actual twist would tend to be slightly less than the figured twist, however on the other hand, as contraction shortens the yarn somewhat this would have the effect of putting in more twist, thus the two conditions would tend to equalize these variations so that the actual twist will be found to be close enough to the figured twist for practical purposes.

It is customary to find the number of turns of the spindle during one revolution of the front roll and this may be done by considering the gear on the end of the front roll as a driver and tracing this theoretical motion to the spindles. (Twist problems are simplified by knowing the ratio of whorl to cylinder speed, which is usually furnished by the frame builders. This ratio appears in the twist calculation as a dividend and goes above the line. The front roll circumference is a divisor, for mechanical twist means turns of the spindle divided by a certain number of inches of yarn, in this case the number of inches in one turn of the front roll, so the turns of the spindle are divided by the number of inches yarn delivered in one turn of the front roll.

See gearing diagram in Fig. 3 and solve for turns per inch. Beginning with the front roll gear of 100 teeth, which is a driver gear we put this above the line in the equation. The intermediate gear is not counted as it has no effect other than to transmit motion along

its rim. The twist gear is a driven gear so is put below the line. The jack gear is a driver so is put above the line, while the cylinder gear goes below the line as it is a driven gear. Instead of putting the diameter of the cylinder over the diameter of the whorl we use the ratio between these, which is, as we have already said, usually furnished by the frame builder. This ratio goes above the line. Next the circumference of the front roll goes below the line. Using the gearing as shown in Fig. 3 the equation will be,

$$\frac{100 \times 132 \times 8.30}{26 \times 66 \times 3.1416} = 20.32 \text{ turns per inch}$$

Note: By leaving out the circumference of the front roll the result of the foregoing equation would be the turns of the spindle during one revolution of the front roll, so by dividing this figure by the circumference of the front roll the number of turns per inch is obtained. The problem is simplified, of course, by combining all this in one equation.

By solving this problem we get 20.32 as the number of turns per inch.

The constant for this frame is easily obtained by leaving the twist gear out of the foregoing problem and solving, the result being, according to our calculations 1341.31. Future calculations are simplified by using this constant as follows:

$$\frac{\text{Constant}}{\text{Twist}} = \text{Twist Gear}$$

$$\frac{\text{Constant}}{\text{Twist Gear}} = \text{Twist}$$

In spinning rooms having frames of more than one make, or even different models of the same make, draft and twist may be found to vary on these frames that are unlike. Should this condition be found to exist it might be well to check the gearing and refigure the draft and twist constants, throwing away no decimals until the final results on all the different models have been obtained. The chances are that enough discrepancies will be found to account for the errors in draft and twist. If serious enough slight changes in the gearing could be made then new constants would have to be figured.

Without going into the theory of why the square root of the yarn number is used in determining the twist in the yarn,* in order to make this series complete we will review briefly the usual method of figuring the twist to be inserted in yarns. A few multiples for ring frames that are widely used are:

Warp yarn 4.75
Filling Yarn 3.50
Hosiery Yarn 3.00

Then to find the standard twist per inch multiply the square root of the yarn number by the twist multiple.

Example: Find the standard turns per inch for 36s filling yarn.
The square root of 36 is 6
$6 \times 3.50 = 21.00$ T.P.I.

Because of local conditions, that is, length of staple, purpose for which yarn is to be used, whether

*See "Why the Square Root of the Number is used in Figuring Twist in Yarn", by Homer Carter, page 1226, in the November 1931 issue of COTTON.

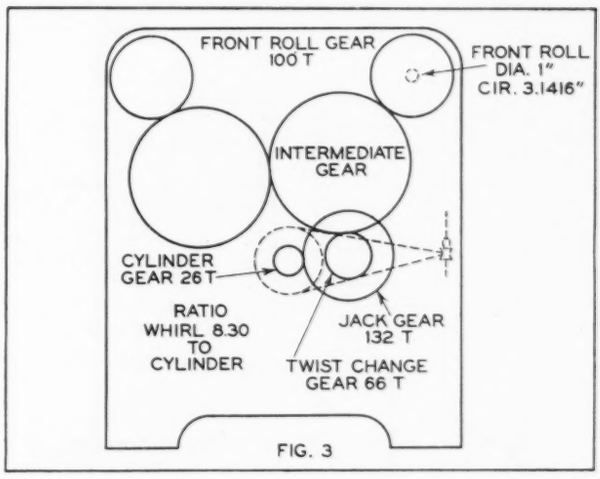


FIG. 3

it is to be made into ply yarn and so on, other multiples than these might be adopted, however the rule for finding the turns per inch will remain the same.

Testing in the Spinning Room

An important factor in the successful operation of a spinning room is the regular and systematic checking the yarn numbers, or *weights*, as usually expressed in spinning room terms. In a large mill this work is usually done by a test man who may have other duties. The overseer or the secondhand could probably take care of this in a small mill. The equipment** needed will be a *yarn reel*, grain scales, a suitable table and a container with compartments for the different numbers of yarn.

The general practice, we believe, is for the card room to test a certain number of bobbins of roving, and send these special bobbins to the spinning room. The test man will *set this roving in*, or creel it, on various frames, taking care to see that a test will be run on each yarn number being made at the time. When the bobbins are about half full they are doffed by the test man and put in the container, each section of which has been previously marked with the yarn number. Usually four bobbins of each number will be tested, two from each side of the frame.

A skein will be reeled from each bobbin, and the average weight for each number obtained. If the average number varies too widely, or even if one bobbin is too much out of line, another skein will be reeled. If the results are still bad the bobbin of roving may be tested. In other words take every precaution to see no errors have been made, but when the results show that the yarn is actually weighing wrong then the card room should be notified to correct the weights.

In addition to the regular testing the test man should get a weighing from frames that have been

(Continued on page 94)

**If the mill has a laboratory, or other facilities available for testing breaking strength, and this is very essential, air-tight cans will be needed to keep the yarn at the *room condition* until it reaches the place for testing.

SURFACE ACTIVE AGENTS

Their Applications in the Wet-Processing of Textiles

THE FIRST two installments of this discussion, in the November and December issues, reviewed the general history of wetting agents, and the close relationship of penetration to detergency in textile wet-processing. The author described the accepted tests for evaluation of wetting agents, and gave a discussion of the several different classes of products used as surface active agents in textile work. He covered the soaps, the sulfonated (sulfated) oils, the soluble solvent compounds, and the synthetic surface active agents and "synthetic detergents". He then gave a general discussion of the requirements of a wet processing aid, the textile applications, and the need for simpler tests for detergency, etc.

This, the third and final installment, discusses wet-processing for Sanforizing, the newer cation active finishing agents, etc.—The Editors.

By Andrew J. Kelly
Burkart-Schier Chemical Co.

Part III

A FACTOR in wet processing which must always be considered is the feel or "hand" acquired by textiles from the use of various agents. Sometimes soap is used in scouring and dyeing operations largely because it imparts to the finished material a desirable softness and fullness which may eliminate the need for a subsequent "finishing" bath. Soaps and sulfonated oils, due to their fatty nature, generally lend a pleasing handle to goods processed with their aid. This same fatty nature, however, sometimes results in the development of disagreeable odors or discolorations in stored goods. This tendency is rather unpredictable and some mills have used soap or oil finishes for many years without any trouble.

The writer has some bleached materials finished with fatty compounds which have been boxed away for three years and longer and are as clean and sweet as the day they were put in storage. Standard finishing agents were used, without the addition of any preservatives or antioxidants. These latter, however, may be used as added safeguards, and many of the fatty softeners do contain sufficient preservative or antioxidant to inhibit any tendency toward rancidity occurring. It is a question in the minds of many as to whether these undesirable after-effects occur as the result of bacterial or of chemical action. If the former, any good antiseptic or preservative should suffice; if the latter, then an oxidation suppressant would be indicated. The use of high titer saturated fats, such as stearic acid or stearine, is generally preferred; the absence of double bonds makes oxidizing much less likely.

Wetting-Out for Sanforizing

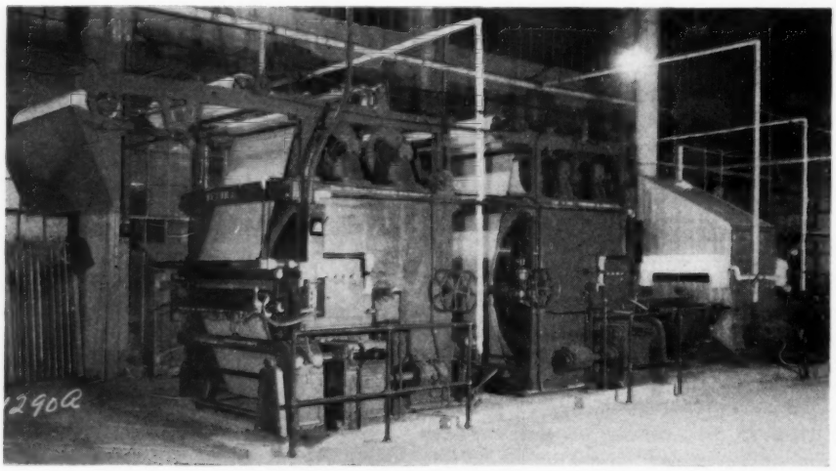
As for the synthetic products, they vary in the amount of finish imparted. Considered as a group, they show little or no inclination toward going sour if left in stored goods; this was to be expected since they do not hydrolyze in solution to form any free fatty acids. Concurrently, they do not provide the fiber lubrication which is considered an important part of the softening process, and which is usually thought of as being occasioned by fats or fatty compounds.

A unique problem in wetting exists in the processing of fabrics which are scheduled for Sanforizing or pre-shrinking. Here, aside from the penetration necessary in the usual scouring, dyeing, and bleaching, it is required that the material be easily re-wet after drying. That is, it must be highly absorbent so that shrinking can be effected rapidly, uniformly, and completely. The speed of re-wetting is a measure of the efficiency of a finishing agent applied to cloth to be pre-shrunk. It was discovered that soluble mineral oils, especially those of the mineral oil-mineral oil sulfonate type, were particularly suitable and that material finished with such compounds were quite easily re-wet after drying.

Mineral oil sulfonates are produced in fairly large volume as a by-product in the manufacture of white mineral oils. Of themselves, they would hardly be classed as wetting agents, in fact they tend to retard original wetting to a certain extent. A 1 per cent solution of a typical mineral oil sulfonate of the class being considered gave a sink time of over 100 seconds by the AATCC method. There has

been some attempt made to improve their original and subsequent wetting time by incorporating or blending in one or more of the synthetic surface active agents of the ultra-fast type; to date there has been no very wide acceptance of such blends.

A few users of the mineral oil sulfonates have complained of the handle of goods processed with them, saying that the feel is all right at first or soon after processing but tends to become progressively less desirable. Hence some manufacturers are offering mixtures of the soluble mineral oils and sulfonated fatty oils such as sulfonated castor oil, olive, teaseed, etc. Likewise the use of this type of finishing compound is by no means universal but it may be a straw in the wind indicating that the fatty products may be in for something of a resurgence.



Courtesy, Textile Finishing Machinery Co.

A tandem Sanforizer, consisting of a Super-Sanforizing unit with a super reverse or auxiliary finishing unit . . . . . .

Fabrics finished for Sanforizing may be tested for absorbency quite simply; small swatches in the form of squares or discs are cut out and dropped on the surface of a beaker of plain water. The time required for submergence is measured. Exactly the same as the original test for wetting agents except that the agent is dried in the material rather than dissolved or dispersed in the liquid. Time marches on—in a circle!

The Cationic Active Agents

Another type of "active" aid for use in wet processing has recently appeared—the cationic active finishing agent. It really merits the prefix new, being unlike anything hitherto offered. The term of course comes from the ionic theory which propounds that substances in true solution dissociate or ionize to form electrically charged atoms or groups of atoms known as ions. Those atoms or groups possessing a positive charge are known as cations and those with a negative charge as anions. Thus sodium chloride or common salt in solution ionizes to give sodium with a positive charge (Na^+) and chlorine with a negative charge (Cl^-). In an ordinary soap such as sodium oleate (similar to olive soap) the cation is the sodium (positive) and the anion is the long chain fatty acid or hydrocarbon group (negative). With the cationic active agents this set-up has been practically reversed.

The long chain hydrocarbon or fatty acid group is the positive or cation and the anion is a sulfate, bromide, chloride, etc.; the fatty substance takes the place of the sodium in the illustration using sodium chloride above.

These cationic compounds are strongly adsorbed by textile fibers; and since the ions are very mobile in solution most of them will eventually come into contact with any material placed in such a solution and attach themselves thereto. In other words, they exhaust well. They might be said to be substantive in this respect, exhausting onto the textile fibers practically as do certain dyestuffs; they further possess some wetting properties. The long chain is commonly a quarternary ammonium, sulfonium, or phosphonium group—a typical cationic active agent is cetyl pyridinium bromide. These products adhere quite strongly to textile fabrics and are justly described as permanent finishes, though the term has been more commonly applied to the synthetic resin and allied finishes.

Some of the cationic compounds have the further property of increasing the fastness of certain dyestuffs and are being rather extensively applied for this purpose. These products represent one of the most interesting groups of wet-processing aids to yet appear and possess some fascinating possibilities. For instance, it has already been suggested that rubber may be much more evenly and deeply impregnated on textiles by first applying one of these new agents. The rubber particles being negatively charged eagerly attach themselves to fabrics containing the positive cation groups. Due to the substantivity of the cation agents unbelievably small quantities are required for many finishing operations. As for the synthetic resin finishes, though not of themselves designated as surface active agents, it is quite probable that in the ultimate development of the technique of application some one or more of these agents will be involved.

The Place of Surface Active Agents

Surface active agents are solidly established in all the ramifications of the field of wet processing of textiles. Well past the experimental stage, they belong with soap, dyestuffs, bleaching agents, alkalis, etc., among the basic supplies of the mill chemist and colorist. No well-ordered dyehouse or bleachery can afford to ignore these aids to efficient operation, particularly in view of the ever-increasing demands placed upon the dyeing and finishing departments.

The ultimate place of some individual wetting agent or group may be as yet undetermined but there is no gainsaying the solid foundation of the products as a whole. New offerings are appearing uninterruptedly and a nice problem is

involved in attempting to keep abreast of developments. Furthermore, lower prices now in effect for many of the synthetics really calls for a reconsideration of their merits on a money value basis. It is interesting to note in passing, however, that even at these much lower costs there is little indication that the more venerable types of wet processing aids will be notably displaced.

It was freely predicted a few years back that soaps and allied fatty acid products were on the way out and that their complete disappearance awaited only the inevitable cut in costs and selling prices of the soapless detergents. This inevitable latter event has occurred in large measure without seeing the fulfillment of such dire prophecies. It pretty definitely appears now that in the textile mill of the world of tomorrow both the "natural" and the synthetic agents will find a place. The elusive panacea for all dyehouse ills has not been found among these newer aids, though they have certainly alleviated a lot of dyehouse misery". A most valuable addition has been made to the assistants which the textile colorist must call upon in meeting the growing requirements of his field of endeavor.

There is no intention here to draw a comparison between the synthetic versus the natural compounds, since as stated it is felt they supplement each other anyhow. It may not be out of place in concluding to summarize a few of the more pronounced characteristics of each group in line with what has been said before.

Characteristics of "Natural" and Synthetic Agents

The soap and soluble oil products and combinations, generally speaking, have these items to their credit:

1. Good detergency.
2. Adequate wetting for many needs.
3. Alkaline reserve for boil-off and scouring operations.
4. Lower cost (this differential is being whittled away).
5. Emulsifying action.
6. Softening and lubricating action.

The newer aids have an imposing series of factors in their favor, among them being:

1. Fast wetting (not necessarily true in every instance, but characteristic).
2. Resistance to almost any reasonable degree of hardness in water.
3. Neutrality in solution.
4. Effectiveness in very dilute solution.
5. Effectiveness in acid baths.
6. General freedom from undesirable after-effects.

These respective considerations, along with of course the many which will apply to individual cases, may well be weighed in selecting an assistant for a particular wet process. The problem is indeed largely one of selection rather than decision, for no matter what the process may be or whether it be concerned with scouring, bleaching, dyeing, or finishing—surface active agents have a place.

Possible Future Developments

It would seem probable that the next few years will bring a consolidation of the present position of the surface active products rather than any very startling new developments in this particular field. New offerings, although coming with the frequency already noted, tend to fall into fairly well-defined groups. These indications would hold particularly true if the present promise of reviving business is made good. Research and development must inevitably go forward —there can be no standing still— but nevertheless they are in part at least children of the depression and are pushed most actively when sales are off. The war in Europe will also influence coming events insofar as chemical research is diverted into other channels of thought. Discoveries and inventions already evolved stand in definite need of assimilation. The background of knowledge and experience which is being built up by actual mill practice will be of the utmost value in evaluating what is to come and will tend to relieve the textile industry of its role of "guinea pig" in determining the ultimate worth of new products. A realization of the shortcomings of past efforts and the understanding of what the mills require enables the manufacturer of wet processing aids to carry new work to the farthest possible point and to practically "mill-test" it before an offering is made to the prospective ultimate consumer. All of which should lead to calmer and more dispassionate judgment on the part of both seller and buyer.

The textile industry may feel a just pride in the pre-eminent position it has held in the development of surface active agents for industrial use. The mill man's ready acceptance of these new chemical compounds has been perhaps the major factor in their amazing growth; a growth fully warranting the adjective "amazing!" The willingness of the textile chemist and colorist to work with the suppliers of these products has brought about a phenomenally rapid advance in both the technique of manufacture and of application

The role of "guinea pig" mentioned above has been no mean one. This pioneering work with its attendant results and accomplishments has naturally attracted attention in other spheres of activity. Surface active agents are being applied or considered in a great variety of vastly different fields, many of them totally unrelated to textiles. A most cursory examination of current technical literature will offer convincing evidence of the truth of this statement.

In mining and metallurgy, in brewing, in the processing of rubber and latex, in the manufacture of paints, varnishes, and stains, in leather tanning, in petroleum recovery, in the treatment of fuels, in work on agricultural sprays and insecticides, in glue and adhesive chemistry, in papermaking, in the production of drugs and cosmetics is found a steadily increasing interest in these agents and their possibilities. And for much of what is being done the experience gained and the knowledge acquired in the wet processing work on textiles serves as a primary background. Irksome but necessary "spade work" being already completed, constructive effort may be almost immediately applied. The textile industry, so often misbranded "backward", is here as elsewhere making an honorable contribution to society through industrial progress.

THE RAYON INDUSTRY

IT HAS BEEN reliably estimated that well over half of the cotton mills in the United States now use rayon in some proportions in the production of their goods—naturally some mills have gone into this stronger than others, but there are few plants today that are not in some way interested in the processing of rayon. At most of the discussion meetings attended by the textile operating men of the South, filament or spun rayon, usually the latter, was either on the program or came up during the meeting.

Without attempting to describe the various methods of rayon manufature, but to the end of presenting in clear-cut diagram the general processes in making rayon, the chart on the opposite page has been prepared. It is a flow chart of rayon manufacture by the three processes, viscose, acetate, and cuprammonium. It will be noted that both cotton linters and woodpulp are the basic requirement, being converted by chemical solutions. It is interesting to note that by at least one of the processes, it requires about 12½ pounds of chemicals and about 7/10 of a pound of bleached cotton linters, along with large quantities of pure water, to produce a pound of rayon. However much of the chemicals used can be reclaimed and re-used.

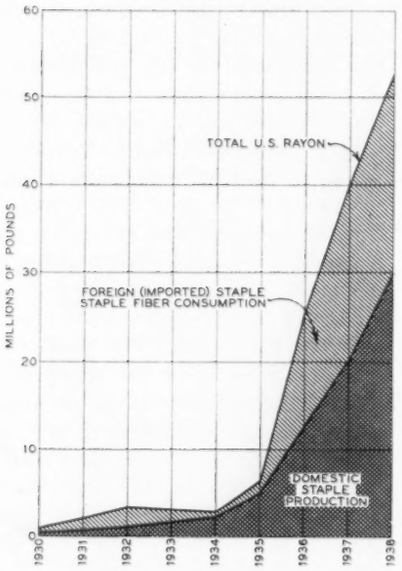
The rayon industry in this country is a growing one, and since 1911 production has increased nearly 1,000-fold. In 1937 alone there were 321,000,000 pounds manufactured. The consumption of rayon is said to be increasing at the mean rate of 30 million pounds per year. This can be better understood when it is known that about 95 per cent of the silk mills are making use of rayon, more than half of the knit goods plants, and even between 15 and 20 per cent of the woolen mills. It is said that the industrial worth of the present domestic rayon output is between 300 and 400 million dollars annually.

During 1938 there were 53,086,000 pounds of cut staple rayon consumed by the mills of this country. Of this 44 per cent was imported from foreign countries because of lack of domestic supply. Today, the domestic demand for rayon staple fiber actually exceeds the entire domestic rayon production for the year 1925. It now represents the major portion in the annual increase in consumption. The textile plants of this country are spun rayon conscious. The accompanying graphs will indicate something of the increase in use of cut staple fiber, and the percentage that still is supplied from abroad.

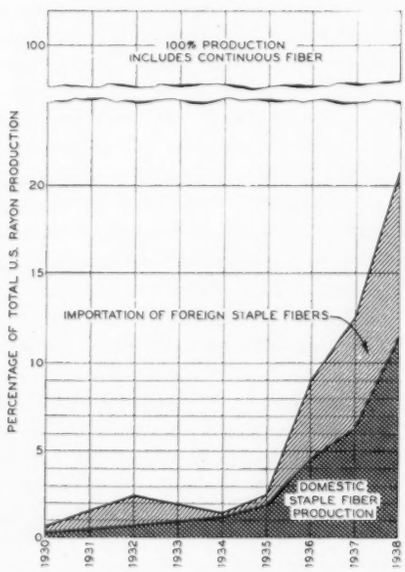
Inasmuch as the production of cut staple rayon yarn and fabrics is still relatively new, mills producing this type of goods have been forced to utilize the existing equipment, e. g., cotton or wool processing machines. Machinery manufacturers have done much to aid the mills by furnishing technical processing data, and great headway has been made by the exchange of information among the mill men themselves. The cotton processing machines are being adapted with certain changes to run spun rayon, and other entirely new machines are available, with still others rapidly reaching the point of perfection.

This magazine has followed the rise of rayon production, and has presented on many occasions* processing information pertaining to the utilization of spun rayon and its many blends.

Flow chart and figures extracted from "Rayon Industry" by Reginald Trautschold in the November 1939 issue of "Southern Power and Industry", Grant Building, Atlanta, Ga.



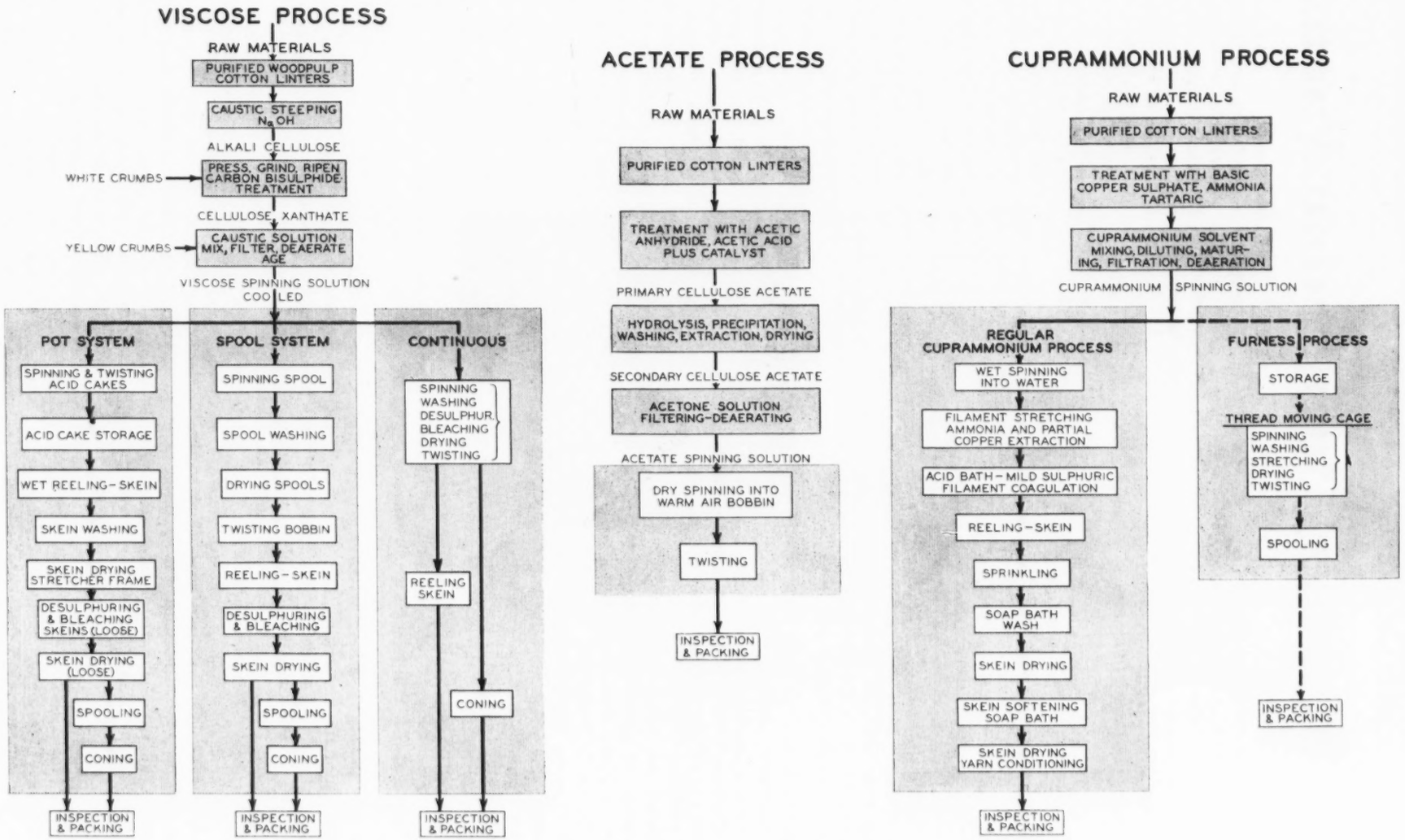
DOMESTIC RAYON STAPLE (SHORT FIBER) CONSUMPTION. NOTE THAT IMPORTS PROVIDE ABOUT 43 PER CENT OF THE SHORT FIBER RAYON NOW USED IN THE UNITED STATES.



FOREIGN RAYON STAPLE FIBERS SHOW HEAVY INROADS. THE CHART SHOWS CONDITION OF STAPLE (SHORT FIBER) PRODUCTION IN PER CENT OF TOTAL RAYON CONSUMPTION.

*The editors of COTTON have available an index of 24 articles dealing with the processing of spun rayon and its blends, which is available without charge upon request. Reprints of the articles themselves are not available, but the index will be an aid in locating the articles if the reader has access to a file of back numbers of the magazine.

FLOW DIAGRAM OF PRINCIPAL RAYON PROCESSES



FLOWSHEETS OF PRINCIPAL RAYON PROCESSES EMPLOYED IN THE UNITED STATES

Slubber Production Factor

By E. G. Field

William H. James & Associates

WHAT production factor should be established as standard for a specific job? Here the words "production factor" are used to express the percentage of theoretical production that may be obtained in actual practice. To answer the question three methods may be used: (I) Consult the machinery manufacturer's handbook, (II) Look over the actual production records and do some selecting or averaging of past performance, and (III) Make a computation using specific known facts.

In order to keep the discussion within some limit, an example will be taken for the slubber operation, which is familiar to most mill men.

Method I. Let us first look at the machinery handbook. At once a difficulty is noted in that the manufacturer's table often shows a twist per inch different from the mill practice. An examination of the table foot-notes may locate a statement of the twist multiple which is below that found necessary by the mill and this immediately suggests that the table was prepared some years ago when longer staple and better grade of cotton was used. Glancing at the spindle speed in the table, the overseer may find that the actual spindle speed is more than the table speed and he makes a mental reservation.

So the overseer passes over the twist and spindle questions to the revolutions of the front roll. Perhaps this doesn't fit so the overseer looks back at the diameter of the front roll and finds that the table uses one a little different from the rolls in the mill's machines and it is necessary to compute the table speed into the equivalent speed for the actual roll diameter. And then, if the equipment is in good condition, it is possible that the actual mill speed may be ten per cent above the table speed. Accordingly the overseer adds something to the hanks per day shown in the table and drops off 20 per cent to reduce the result to the possible number of hanks in an eight-hour period.

Then if he still wants to know the production factor, he computes the theoretical hanks in 8 hours and divides that amount into the modified-table production of hanks in 8 hours and learns the production factor he might expect. It becomes somewhat of an annoying job so is not often done. Sometimes a short cut is used by computing the production factor directly from the table figures and then

that factor is applied to the actual speed to set up an objective production figure for the mill.

In practice such objective production figures developed from tables (either with or without modification) frequently are found unsatisfactory, especially at both ends of the tables. This is partly explained by the manufacturer's footnote that a fixed time has been allowed per set for doffing and stops. But the table does not explain the number of spindles per frame, which materially affects both the time to doff and the number of stops per doff. And the table makes a very definite assumption that the stops per doff are constant, regardless of the roving number. Thus it is that some overseers can use the tables while other overseers are very critical of such tabulations.

Method II. When an overseer is setting piece rates he is most concerned with two facts: (1) How many hanks do the operatives make? and (2) How many hanks can they make? So he looks at the production record, payrolls, etc. There he notices a difference in the men, a difference in the results by days, etc. To answer the first question, he averages the production per man and to answer the second question, he looks at the record of the best man. The difference between the high and low man is often considerable, so further study is warranted.

Then the overseer becomes interested in the production factor, which is the percentage of theoretical that was obtained. This is computed by dividing the actual hanks by the quantity that would have been produced in the same hours if the frame had not been stopped. This answer is compared with the production factor obtained by use of the manufacturer's table (Method I). If close together, then Method I proves Method II, but if different, then Method II disproves Method I. In either event Method II is the most used.

Now it so happens that occasionally an overseer has fallen out with the agent because of questions about production, especially after visits to other mills and some comparisons of results. So it is desirable to have a more definite method for computing the expected production.

Method III. The fact-finding mill executive feels the need for more definite knowledge of what can be expected, both for setting operation standards and for selecting the equipment to be replaced. Alert overseers, superintendents, agents, and managers can use the results from simple calculations of production factors, as shown in the

accompanying illustration.

Little explanation will be necessary as each step may be followed. Some basic data was set down to describe the machine. The product was then specified, and it often is desirable to include other identifying features such as twist gear, twist multiplier, cotton, etc.

In making the calculations a common 1-inch diameter roll was used to develop a constant which was converted for the actual diameter and multiplied by the r.p.m. to obtain the theoretical hanks per minute. This was reduced to pounds per minute. By use of the standard weight of roving on the bobbin, the theoretical minutes to fill the bobbin was established. In the illustration this is computed as 58 minutes.

From ends down tests it had been determined that 8 stops per doff could be expected and these were figured at one minute each to establish the minutes per doff for the stops. For this length of frame and its location, 9 minutes had been determined as an average time for doffing and cleaning per set. This adds up to a total of 75 minutes per doff which cannot be bettered unless the machine can be speeded up, the end breakage reduced, or faster doffing developed. It is a specific answer to a definite question, and the calculation can be readily done using the particular initial facts.

In computing the production factor, the maximum production expected is first established and then modified by experience for the result to be expected when the operator is on the two-frame job and this modified percentage is the standard production factor. It is computed for a specific frame, roving, job, etc., without reference to any tables and can be checked and understood by any person having a little knowledge of the operation.

In this connection it may be of interest to note that as the front roll revolves faster the production factor will tend to fall. This is important to remember for it has an effect upon the cost and the lowest cost will be obtained where the several contributing factors will combine most advantageously. It is also an example of the practical application of the law of diminishing returns.

SLUBBER PRODUCTION FACTOR

Basic Data		
Package		12 x 6
Spindles per Frame		68
Front Roll Diameter		1.25
Machines per Operator		2
Product		
Roving		.55
R.P.M. of Front Roll		200
Minutes Required		
Diameter of 1-Inch Roll		1
Pi	×	3.1416
Circumference in Inches		3.1416
Inches per Yard	÷	36
Circumference in Yards		.0873
Yards per Hank	÷	840
Hanks per Revolution of 1-Inch Roll = Constant		.000104
Diameter of Front Roll on This Frame	×	1.25
Hanks per Revolution of Front Roll		.000130
R.P.M. of Front Roll	×	200
Theoretical Hanks per Minute		.0260
Roving Number	÷	.55
Theoretical Pounds per Minute	÷	.0473
Pounds on 12 x 6 Bobbin		2.75
Theoretical Minutes to Fill Bobbin		58
Minutes per Doff for Stops (8 @ 1)		8
Minutes to Doff and Clean		9
Minutes per Doff on One Frame		75
Production Factor		
Theoretical Minutes to Fill Bobbin		58
Minutes per Doff on One Frame	÷	75
Maximum Production Expected		77%
In Operation When Using Two Frames	×	90%
Standard Production Factor		69%

Today when it is essential that costs be reduced, it is important to test the actual performance for production factors and then make some comparisons with the maximums to be expected. This is brought out by the "90% In Operation using Two Frames". It is an established fact that there are times when both machines will be stopped at the sametime due to interference or overlapping in doffing, end breakage, etc. A reasonable consideration must be made in figuring production, equitable piece rates, etc.

The mill that has not considered its own specific equipment is at a disadvantage. Is the frame waiting for roving or held up for bobbins? Is there too much changing? Do certain numbers interfere too much? Will another frame model save money? It is the author's opinion in every mill these operations should be reviewed from time to time.

How to Sell Your Ideas

Sometimes supervisors are too afraid that in giving credit to others they will lose some credit themselves. This, however, is a shortsighted rather than longsighted attitude. Remember always that:

1. To GET credit from your associates you must be ready and willing to GIVE credit wherever and whenever it is deserved.
2. Trying to "hog the credit" will stimulate your associates to "gang up" on you to try to prevent you from getting credit even for the things on which you really deserve credit.
3. When you SHARE credit, you automatically delegate some responsibility to the other fellow to help make the idea work.
4. Few of us ever have an entirely original idea, so much is our thinking based upon ideas gathered from many sources, and so we must always be careful when assuming exclusive authorship of an idea.
5. The jealous supervisor who wants to put a loud speaker on his own ideas and a muffler on the ideas of others soon develops total deafness in others to his own ideas.—"*Management Information*", *Elliott Service Co., Inc.*

So True

It has been said, "There are two kinds of men who never amount to anything—the man who can't do as he is told, and the man who can do nothing else."

The greatest success and highest positions go to people most capable of thinking, judging, and taking initiative.—"*Management Information*" *Elliott Service Co., Inc.*

Left to right: Claudius T. Murchison, Governor-Elect Paul Johnson of Mississippi, and Harry D. Wilson, examining some of the fabrics on display at the New Orleans meeting . . .

Cotton Consumption Council Plans Promotion Program

BROADENED and strengthened activity in the promotion of cotton products, from forces backed by raw cotton producers and by distributors in non-textile fields, resulted from the meeting of the Cotton Consumption Council in New Orleans, December 13. Harry D. Wilson, commissioner of agriculture of Louisiana, is chairman of the Council, and Charles K. Everett, of The Cotton-Textile Institute, New York City, is secretary. The governing board includes representatives of cotton growers, of the southern association of commissioners of agriculture, and C. T. Murchison, of The Cotton-Textile Institute, and Robert T. Stevens, of J. P. Stevens & Co., New York City, representing the textile industry. In addition, the Council includes John P. Nichols, managing director of the Institute of Distribution, Inc., which embraces practically all chain store and mail order houses, except the food chains—its members purchase annually more than eight hundred million dollars worth of cotton textiles; and John A. Logan, executive vice-president of the National Association of Food Chains.

At the New Orleans meeting, Mr. Nichols presented, and the Council adopted, a 15-point program for National Cotton Week for 1940. Several especially significant features are noted:

1. National Cotton Week this year will embrace the period of May 17 to 25, which will be eight shopping days, including two Fridays and two Saturdays.

2. The responsibility for 1940 National Cotton Week and its materials, data, publicity, co-ordination, etc. shall be vested in The Cotton-Textile Institute, which shall work with chain and independent distributors and with other participants, through their associations (including the Institute of Distribution, Inc.; National Retail Dry Goods Association; Ben Franklin League; Federated Stores of America; National Cotton Council; National Association of Food Chains; National Association of Chain Drug Stores; National Council of Shoe Retailers; Limited Price Variety Stores Association; Mid-South Cotton Growers Association; American Cotton Co-operative Association; Wholesale Dry Goods Institute, Inc.)

Mr. Nichols displayed evidence of whole-hearted co-operation in year-round promotion of cottons, climaxed in National Cotton Week, from every national non-food distributing chain in the country; and Mr. Logan supplemented this with pledges from the food chains.

In an address before the Council, Dr. Murchison reviewed the position of cotton among agricultural products, pointing out the many and varied competitive forces working against it, and citing the inconsistency of the governments programs as relate to cotton growing, on the one hand, and cotton manufacturing on the other. He showed how contradictory policies of government procedure, while permitting certain practices for agriculture, frown on similar practices by industry; he demonstrated that agriculture is almost wholly dependent upon industry for its own success, and spoke strongly against any processing tax or the equivalent of a processing tax on cotton, "not only in our own interests, but in the interest of cotton as an agricultural commodity and as an article of commerce."

Mr. Everett, of the Institute, report-

Some of the costumes showing new cotton fashions, modeled by New Orleans debutantes at the Cotton Consumption Council meeting; third from right is the Scarlett O'Hara dress, taken from the motion picture, "Gone with the Wind" . . . . . .

ed on the progress made in cotton promotion since the last meeting of the Council, and conducted a style show, with New Orleans debutantes as mannequins, presenting some of the coming style trends in cotton dresses and sports costumes. Dean Hill, of the Durene Association, presented the sound-slide story of Durene recently prepared for educational work among retail distributors.

Organized two years ago in Atlanta, the Cotton Consumption Council has demonstrated beyond question its usefulness to the industry. Marshalling as it does—for the first time in the industry's history—all elements concerned with cotton and its welfare, from the grower through each stage to and including the distributor to the consumer, it has tremendous force and unlimited possibilities in enlisting constructive and effective aid and correlating all promotional activity through the Institute as the directing force and spearhead of effort.

Enlistment of the potent assistance of the retail chain store organizations in pushing the wider sale and use of cottons is one of its achievements.

Carding and Spinning Subjects Discussed at Spartanburg

THE CARDERS-SPINNERS Section of the South Carolina Division of the Southern Textile Association held its regular meeting at the Hotel Franklin, Spartanburg, S. C., December 2, with G. G. Simmons, of Drayton Mills, Spartanburg, chairman of the division, presiding. The technical discussion was led by W. W. Splawn, Pelzer (S. C.) Manufacturing Company.

A feature of the meeting was an address by W. M. McLaurine, secretary, American Cotton Manufacturers Association, who spoke on leadership and foremanship.

The first question on the prepared list asked "which tells the story best, 'beats per inch' or 'beats per pound'?" Opinion was divided on this subject, with Smith Crow of Drayton Mills preferring the term "beats per inch" and J. L. Brannan, Hermitage Cotton Mills, Camden, S. C., advocating "beats per pound". Discussion was at some length, and when all was said and done, both men were in agreement that it makes little difference which term is used so long as the picker is changed to suit the stock that is being run. Mr Brannan brought out that if the weight of the picker lap is reduced, then the blows per pound (or per inch) should be reduced accordingly, inasmuch as the same amount of stock is not passing through the picker and to maintain the same number of beater blows on the heavier and the lighter lap will damage the stock.

Does slowing down beater speed affect quality of lap? was the next question, and it was agreed that this question could not be answered unless the original speed of the beater was known. The opinion was expressed that when using the carding beater 1050 r.p.m. gives the best results and when the speed on this type beater is lowered past 900 r.p.m. the stock is not cleaned properly.

Picker for Spun Rayon

Entering into a discussion of the new one-beater picker especially designed for spun rayon stock, Mr. Crow advised that he has not had experience with this picker, but has seen it in operation both at the Saco-Lowell Shops and at a mill in New England, and that it seems to be a practical machine; adding, with reference to this type of picker, that "I think we will soon come to this". At this point a member said that he had seen cut staple rayon run on the regular cotton system, using three beaters in the pickers, but has considered that this is too much beating for the stock. Mr. Crow told of making 20s to 30s and even finer on the cotton system, and with good results, but pointed out that a machine built especially for the job could possibly produce even better work than the mills are now getting on spun rayon. He described the new rayon picker as having only one beater, which makes an upstroke instead of a downstroke. The beater is on the order of a carding beater, but instead of having sharp points, the spikes are rounded or ball-shaped on the ends, thereby reducing breakage of the staple, according to Mr. Crow. It was further brought out that on the regular system the breakage of cut staple is as high as from 20 to 30 per cent, but on the specially built cut staple rayon picker the stock breakage is reduced to around 7 per cent.

In a discussion of a method of repairing worn feed roll journals on cards, Mr. Brannan stated that it is very important that there be no loss motion at this point, as it is considered essential to good carding to have the setting here correct. He goes over his feed roll journals each year and removes those that are even slightly worn. These are taken to the shop, along with the bearings, and the journals are built up with bronze, then put into a lathe and turned down so that they fit their bearings without any play.

Frank D. Lockman, Monarch Mills, Lockhart, S. C., has seen the boxes taken off and split to remove any play. He said that he has never seen the bearings worn on the bottom—all the wear being on the top.

What can be done to prevent laps splitting on spun rayon, other than using bobbins of slubber roving wound in the lap? was the next question. Some of the members considered it difficult to get away from the use of slubber roving to prevent lap-splitting. Another member told of cutting rings into the calender roll, while still another had wrapped copper wire around the calender roll, the principle being the same. It was brought out that it also would be helpful to place leather straps on the screen and to run the split-lap preventer close against the calender roll.

The chairman asked for the type drawing rolls best suited for spun rayon, and answers given indicated that the experience has been varied with good results being secured on cork, leather and synthetic. Mr. Brannan said that he doesn't think metallic rolls have any place in a cotton mill.

At this point Mr. Splawn brought up the problem of acquainting new employees with their particular job, safety in the plant, general mill policy, etc., and advised that if these things could be worked out satisfactorily, about 60 per cent of the trouble in running a textile mill would be removed.

How do you arrive at proper twist and drafts for spinning rayon staple and blends? next came up. The system described was the method of trial and error, and based on past experience, that is being used by the cotton mills of today. No definite rules can be laid down for arriving at specifications for new fabrics; tests must be made and changes made to suit the individual fabric's needs and the requirements of the mill.

The next question on the list was *What is a remedy for stopping spinning spindles from throwing out oil rather than cutting the spindle speed?* One man suggested going to heavier oil, whereupon another member said that it was his understanding that lighter oil should be used on higher spindle

Reported by John C. Fonville.

speeds. Other remedies to prevent oil slinging out were given, such as making certain that the oil rings are in place, keeping the rails clean of lint, and not permitting the bolsters to become packed with cotton.

Maximum and minimum drafts were brought up, with reference to long draft spinning. Mr. Brannan considers a draft of from 16 to 19 good, and advised that if the draft is too high the breaking strength will drop. He has run a draft of 17½ on 1 1/16-inch and 1 1/32-inch cotton and secured good results.

Joe Cobb, Startex Mills, Tucapau, S. C., considers about 19 as a good draft and is running this on 1 1/16-inch cotton with a front roll speed of 144 r.p.m., double roving. He brought out that it is possible to have too short a draft as well as too high a draft on long draft spinning.

Mr. Cobb further advised that at one time his mill was running 3.15 hank roving and changed to 2.50 hank roving, but discovered no appreciable difference either in the breaking strength of the yarn or in the number of ends down in spinning.

Still another member drafts around 21 on warp and gets a good breaking strength, double roving. He runs his front roll 135 r.p.m. and has 30 ends down per 1,000 spindle hours.

The last question for discussion pertained to the twist multiple best for 30s yarn when spooling on Barber-Colman spoolers with a speed of 1350 yards per minute. George Ray, Victor-Monaghan Company, Greer, S. C., uses 4.40 and 4.50 twist multiples on his 1 1/16-inch cotton.

Mr. Brannan said that he gets better warping using twist multiples of from 4.50 to 4.60, his stops being about 7 per beam. At 4.40 he averages about 8½ stops and at 4.75 twist multiple he gets about 8½ stops per beam (30,000 yards). He uses the end-pull cheese and said that his throwouts are from 8 to 10 per cent.

Mid-State Safety Council Meets at Durham

By H. GRADY LYON
Erwin Cotton Mills Company, Durham, N. C.

MID-STATE SAFETY COUNCIL* held its regular quarterly meeting December 8 at the auditorium of the Erwin Cotton Mills Company, Durham, N. C., with about 225 members present.

An address was given by C. T. Shaner of the Mutual Liability Insurance Company on organizing safety committees, in which the speaker pointed out that the duties of the departmental safety committees are to investigate all accidents that happen in the department, at the same time studying the nature and cause of the accident, to check on employees having poor eyesight or other physical defects that may cause injury to themselves and others; and to train new employees on their jobs, at the same time making them safety conscious and showing them the hazards of their respective jobs. The departmental committee may submit to the management any recommendation to improve working conditions and to remove hazards.

D. C. Johnson, Durham (N. C.) Hosiery Mills advised that his safety committee is composed of employees. An inspector is appointed and he goes over the plant weekly and gives a report on his findings. Another inspector, who receives the weekly report, inspects the mill monthly. The inspectors and committee meet with the plant manager to discuss safety problems in open forum fashion.

W. V. Byers, assistant manager, Erwin Mills, Durham, reported good results from departmental supervision of safety through close supervision of four superintendents. Overseers have charge of the safety in their departments, making reports of injuries, time of accident, and all details, and reporting to the superintendents, who in turn report to the manager.

W. H. Ruffin, secretary and assistant treasurer of the Erwin Mills, brought out the humane side of having people work safely, and further told of the expense involved in injuries, both to the employee and to the company.

Lee Powell of the North Carolina Industrial Commission also spoke on the subject of safety and told how various safety organizations may be formed to meet the requirements of the individual plant.

Durham (N. C.) Hosiery Mills won the plant award in Group 1 by having over 100,000 man-hours of operation without a lost-time accident.

*Mid-State Safety Council is composed of various types of industrial organizations in the North Carolina counties of Durham, Granville, Wake, Person, Vance and Johnson.

Kibler Heads A.A.T.C.C. South Central Section

The South Central Section of the American Association of Textile Chemists and Colorists held its winter meeting at the Andrew Johnson Hotel, Knoxville, Tenn., on Saturday evening, December 9, following the Tennessee-Auburn football game.

P. H. Stott, of the technical laboratory of the dyestuffs division of E. I. DU PONT DE NEMOURS & Co., Wilmington, Del., presented the paper on "The Dyeing of Nylon" which he originally delivered at the annual meeting of the parent organization in Boston in September. The other speaker was Dr. John L. Kind, professor of German at the University of Tennessee, who spoke interesting on Hitler's book, "Mein Kampf".

Annual election of officers was held at this meeting. Fletcher Kibler, of United Hosiery Mills, Chattanooga, Tenn., was made chairman, succeeding Nestor Groteluesehen, of Magnet Mills, Inc., Clinton, Tenn., who has served for two years. W. S. McNab, Quaker City Chemical Co., Knoxville, Tenn., who has been secretary for two years, succeeds Mr. Kibler as vice chairman. Frank Myers, of Geigy Company, Chattanooga, was made secretary; and Andrew J. Kelly, Burkart-Schier Chemical Co., Chattanooga, and Homer Whelchel, Central Franklin Process Co., Chattanooga, were re-elected treasurer and councilor respectively.

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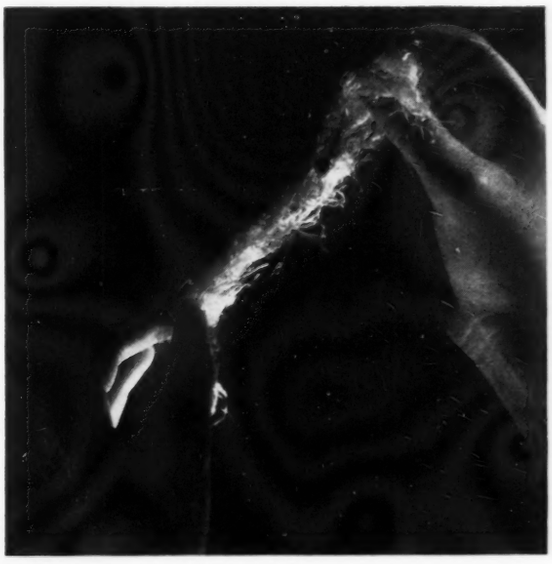
American Viscose and Hollywood

The American Viscose Corporation has announced the inauguration of an exclusive picture and designer tie-up with leading Hollywood producing companies. The plan now scheduled and under way is for Crown Tested rayon fabrics, especially those designed by Pierre Sillan, head of this company's fabric development department, to be used in original fashions created by leading Hollywood designers in a series of forthcoming pictures.

Because of the present war in Europe and the consequent possible slowing down of the great French countries, the American Viscose Corporation believes that Hollywood will rise sharply as a center of important style creation. Hollywood fashions in general have been featured repeatedly, but in many cases those fashions have been difficult to merchandise because they are frequently too extreme to prove wearable by the average woman. However, this company, working directly with leading Hollywood fashion creators at the very inception of their style designs, considers that Hollywood fashions have powerful merchandising possibilities.

CUT RAYON STAPLE



Courtesy Tennessee Eastman Corp.

Is subject of ASME textile division during annual meeting at Philadelphia

PROCESSING of spun rayon held the spotlight of the textile section's discussions at the 60th annual meeting of The American Society of Mechanical Engineers, Bellevue Stratford Hotel, Philadelphia, Pa., December 6. Carl D. Brandt, Whitin Machine Works, Whitinsville, Mass., opened the subject in his address on staple rayon spinning, in which he discussed manufacturing methods from the opener room through the spinning room; Albert Palmer of Crompton & Knowles Loom Works, Worcester, Mass., took up the weaving of cut staple fabrics; and Harold DeWitt Smith of The A. M. Tenney Associates, Inc., New York, went into the dyeing and finishing of these fabrics.

Mr. Brandt compared processing methods of cotton stock and that of cut staple rayon by saying that with cotton as many as 25 or more bales are opened at a time and mixed thoroughly, whereas with cut staple rayon the lots are not mixed at all, but are kept entirely separate, pointing out that it is essential that the mill follow through and keep an accurate check on the progress of individual lots. He illustrated the difference in staple fiber, cut top and commercial cotton by showing fiber distribution diagrams. In cotton and cut top the fibers in any lot may vary from lengths of 1½-inch to less than one-half inch but in lots of cut staple the fibers are of practically uniform length. The uniform length makes possible close settings on all machines employing roller drafting and therefore a more even product should be obtained. Due to this better control, it is possible to employ higher drafts throughout the various processes.

Rayon Deniers

The speaker advised that the most widely used rayon staple fibers are viscose and acetate, which may be obtained cut to any desired length, though the most popular length for use on conventional cotton machinery is approximately 1½-inches. The denier or filament diameter of these two types does not cover the same range—the viscóse type may be obtained as fine as 1¼ denier and the acetate limit for fineness is approximately 1½ denier. As a matter of comparison, the cross sections of the longer staple cotton fibers are roughly equivalent to rayon staple fiber of 1½ denier.

Fibers of different diameters, according to Mr. Brandt, react differently during the manufacturing processes, and if a blend is made of viscose staple of 1½ denier and a cut worsted top or a 3 denier acetate, the coarser fibers will drop out and settle on the roll beams. The reason for this is that in a field of draft the coarser fibers tend to come to the outside of the fiber mass while the finer ones form the core. However, this is a desirable feature for in fancy blends it is the costlier and generally the coarser fibers that are wanted on the surface of the yarn.

He advised that it is quite possible to spin acetate cut staple by itself, notwithstanding the statement that this is said to be impossible. These fibers carry and develop a higher static charge so it is essential to control the temperature and humidity throughout the mill.

Any up-to-date mill was said to be able to handle rayon staple fiber up to 1½-inch successfully, but the older the equipment the more difficult this will be because worn bearings, eccentric rolls, gear trains, etc., with too much backlash, and worn spindles will complicate the problem.

Blending Cut Staple

Getting into the actual processing of cut staple stock, Mr. Brandt described the sandwich method of blending, whereby the fibers to be blended are placed layer upon layer in the proper percentage and then taken vertically from the stack and fed to the lattice apron or hopper directly. The mixture

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Reported by John C. Fonville, of "Cotton".

then passes to a beater and into a bin to be conditioned for a time, with the stock in the bin serving to feed the hopper of the finisher picker.

Another convenient layout, especially useful when small amounts of a second fiber are to be added to a larger percentage of rayon, employs a lattice feed apron and a lap. This lap, correct in weight and containing the effect fiber, is supported on the feed apron. The rayon proper comes from a hopper feed onto this lattice apron and then the mixture passes on to the beater. A lap made by this method is said to contain a constant percentage mixture.

At the Picker

The speaker said that for picking, since no cleaning of the rayon stock is necessary, all grid bars can be closed to prevent excessive waste. As rayon is denser than cotton, a fairly strong air current at the screens is required to form a compact sheet. Nevertheless, it is sometimes necessary to run in strands of roving at the lap calender rolls to prevent splitting; when running coarse denier stock three or four strands may be run in on each side of the sheet. To insure free removal of the pin, the pin may be tapered slightly or covered with heavy cardboard tube.

According to Mr. Brandt, excessive beating should be avoided at the picker, with Kirschner or carding beaters running approximately 600 r.p.m. Three beaters should not be used as this may damage the stock. Too much beating will tend to form neppy stock and to curl the fiber. On one test, he said, an extra or unnecessary run through the picker reduced the final yarn strength about 5 per cent.

Carding Cut Staple

Along the line of carding, the speaker said that a Bramwell feed may replace the lap at the card if the staple fiber has been properly prepared. Also, it is essential that the card be in good condition and that the clothing be kept sharp. He advised against too high a production on the card and suggested not over 6 pounds per hour be carded. To prevent too much strips the flats can be slowed down to an inch a minute, or stopped entirely and simply turned over at intervals of 5 or 6 hours.

For the drawing frames, Mr. Brandt mentioned that wider roll stands and larger rolls have been built to handle the longer staples, or in some cases the conventional drawing is used by removing one line of rolls or running an unweighted top roll. He considers the larger rolls to be more advantageous as he believes they allow better control and prevent excessive lapping. He said that good results are obtained with two processes of drawing, though in the case of blends a third process will prove helpful; the proper number can be determined by trial.

On the subject of drawing rolls, he suggested using a cushioned top roll in the majority of cases, though these will not stand up so well under heavy weighting, but since the staple length is fairly uniform, it is not necessary to have too great a weight on the rolls.

Long Draft Roving

For roving processes the speaker advocated single-process roving as excessive handling is, in his opinion, detrimental, and besides, single process roving eliminates piecing-up. Twist multipliers may run from .75 to 1.0 times the square root of the hank.

Courtesy Tennessee Eastman Corp.

Testing length of cut staple rayon fiber . . . . . .

In spinning Mr. Brandt suggested reduced spindle speeds, enlarged rolls and the use of aprons. Drafts may be increased somewhat, bringing them up to 20 or 25, though high drafts and high speeds tend to increase the static charge set up in the fiber mass; twist multipliers run in the lower brackets.

Weaving Spun Rayon

Going into the discussion on the weaving of spun rayon fabrics, Albert Palmer gave some pertinent facts as to how the mills could aid the cutting-up trade by maintaining a standard width on the fabrics. He brought out that many mills are weaving their cut staple fabrics on looms formerly used for cotton or worsted, with both the dobby and the Knowles head being used for pattern fabrics. Mills which favor dobbies feel that they are more simple and are capable of running at a higher speed than the Knowles head, while those favoring the Knowles head contend that it makes a cleaner shed and that its greater strength is better suited for weaving spun rayon fabrics.

Mr. Palmer told of advances made in yarn carrying capacity of the shuttle, saying that the new shuttles can carry a bobbin containing 90 per cent more yarn, thereby reducing the number of transfers and the possibility of resulting defects. The loom beam has also been increased in size, having adjustable flanges of 24 inches in diameter, which contain 44 per cent more warp, and thereby minimizing lost time and handling in the weave room and producing savings in the preparatory departments. The cloth roll also has been designed so that it may contain twice the amount of cloth as heretofore.

Loom Improvements

Incorporated features in new looms, according to Mr. Palmer, of interest to mills going onto spun rayon fabrics, are the batwing picking motion, the filling stop motion placed in the center of the loom, and a re-designed let-off of either the friction band and lever type or the full automatic type which operates on the principle of a watch escapement.

According to a survey Mr. Palmer had made, he reported several practices that should be of interest to the industry at large concerning the slashing and weaving of cut staple fabrics. In order to eliminate stretch at the slasher, this machine has been fitted with positive feed between the section beams and the size box. For the temperature at which the sizing operation is performed, he said that in some cases it runs as low as 130 degrees F. to as high as 190 degrees F, with average conditions from 150 to 160 degrees F.

The speaker pointed out that methods for handling filling also vary greatly. In some mills the yarn is spun directly on the bobbins and in some it is re-wound. In a majority of cases the traverse in making the filling bobbin is from 1⅛-inch to 1¾-inch. For conditioning the filling some steam it slightly, whereas others make no attempt to treat it.

The shuttle eyes used are those that the mills have been using on other fabrics, but most mills insert fur in the shuttles near the tip of the bobbin, though there are cases where bristles or flannel are employed.

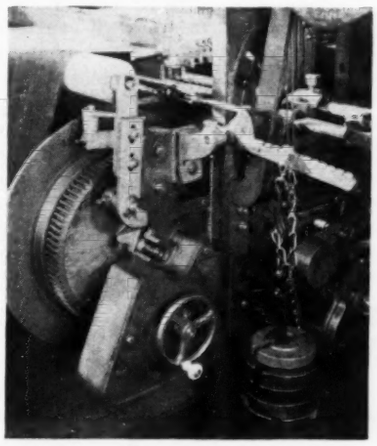
Mr. Palmer said that the take-up roll covering is another point on which there seems to be no agreement when running cut staple fabrics. For blended fabrics the mills are using sandpaper, perforated tin, perforated steel and various types of material made of cork and rubber, alone or combined.

He mentioned that humidity and the maintenance of atmospheric conditions in the weave room is important from a production standpoint because of the fine adjustments which are necessary in manufacturing some types of fabrics.

Dyeing and Finishing

Harold DeWitt Smith next spoke on the dyeing and finishing of fabrics containing rayon staple fiber. He compared the properties of viscose and acetate staple fibers with one another and with the properties of wool and cotton fibers.

In the wet processing of these fabrics, Mr. Smith brought out that the warp size on spun rayon goods is usually made with a base of either gelatin or starches and dextrines. The gelatin size should be completely removable in the course of a proper wetting out and boil-off or scour. When starches are present, an enzyme treatment is advisable. A mixed enzyme is often used on all goods to insure the solublizing of whichever type of size may be present.



Courtesy Crompton & Knowles Loom Works

Automatic let-off use don both the W and C type looms in the weaving of spun rayon fabrics . .

The speaker said that the boil-off and scouring should be carried out in a neutral soap bath containing one-half to several per cent soap, depending upon the other fibers present. For fabrics containing viscose staple fiber the addition of sodium carbonate is permissible, but in the presence of acetate he cautioned that the pH of the scouring bath should in no case be higher than 10 and he recommended the use of a plain soap bath, saying further that if any alkali is needed for the removal of dirt or for a better scouring action on wool, this should be limited to a small quantity of ammonia. Either type of rayon staple can be scoured at temperatures up to the boil, if necessary, but it is customary to scour at temperatures below 180 degrees F. and in the case of mixtures with wool, the presence of the latter fiber suggested the advisability of even lower temperatures. Bright acetate staple may suffer a partial delustering if handled too long at the boil.

Bleaching, he pointed out, may be done with either chlorine or peroxide, and when chlorine is used, the bath should be alkaline in the case of viscose fibers and acid in the case of acetate fibers to avoid tendering. The concentration of the chlorine should be low and the bleaching should be done at room temperatures. In the case of peroxide, both fibers may be bleached in an alkaline bath at elevated temperatures and the pH and concentration are usually adjusted so as to control the evolution of oxygen to the slowest rate that the time available for this process will permit.

Dyeing of Rayon

Both types of rayon staple may be dyed in the form of stock, top, yarn, or piece goods, and the yarn may be dyed on packages or in skeins, explained Mr. Smith. He went on to say that in stock dyeing the load per machine should be reduced because of a tendency of the swollen, softened fibers to mat and form channels. When dyeing acetate staple top or spun yarn in package form, he recommended using dyes with the highest degree of dispersion in order to avoid the shading which is caused by the filtering action of the package on large particles.

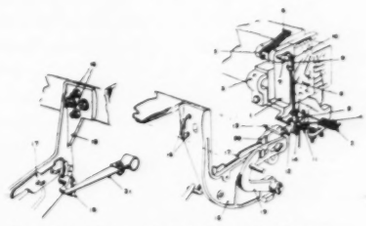
The speaker explained that solid shades of viscose can be obtained by careful selection of neutral dyeing union dyes, but that better control could be obtained by dyeing by the two-bath process. Mixtures of acetate staple with viscose or cotton may be dyed so as to leave either fiber white or to produce a two-color effect or a solid shade. In each case, the dyeing may be done by a one-bath process starting with a neutral soap solution and adding salt as the dyeing progresses in order to drive the direct dyes onto the viscose fiber.

For the dry processing of cut staple fabrics, Mr. Smith said that fabrics containing viscose or acetate rayon staple fibers can be handled with no special precautions in the final or dry finishing operations, such as steaming, brushing, pressing, decating, shearing, tentering, and calendering.

Other Discussions

Getting away from the subject of spun rayon, Alfred C. Abrahams of Philadelphia advised the group of the importance of maintaining standard widths of fabrics, and standard widths in the same cut of fabric, as this has become a major problem in the cutting-up trade. He gave a brief description of how fabrics are cut, and showed the difficulties involved when fabrics in a lot are either too wide or too narrow.

Donald C. Scott, North Wilbraham, Mass., presented an address on methods used in testing the stiffness of yarns and twines, and brought out the factors affecting stiffness, such as twist, moisture content, sizing, carbonizing and tendering. Mr. Scott advocated the use of mechanical means for testing stiffness instead of the age-old method of hand "feel".



Courtesy Crompton & Knowles Loom Works

Center filling stop motion

At the noonday luncheon, Edward R. Schwarz of M. I. T. discussed the engineering aspects of textile technology. His remarks were illustrated with lantern slides of various types of testing machines used in the textile industry, their value, and what could be learned by the use of each.

As a conclusion to the textile session, Ormond W. Clark, Calco Chemical Company, discussed the machinery used in the application of fast dyes to cellulosic fibers. He went into the factors influencing the design, selection, operation and maintenance of machinery used for this purpose.

Piedmont Reed & Sales Co. is New Organization

Henry E. Littlejohn, formerly associated with Steel Heddle Manufacturing Company, and more recently connected with Drayton Mills, Spartanburg, S. C., is president of the newly-organized Piedmont Reed & Sales Company, P. O. Box 387, Greenville, S. C. The company has modern reed manufacturing equipment and will specialize in quality loom reeds. H. C. Beattie is treasurer of the new company.

Culbreath Agent for Parks & Woolson

Ernest F. Culbreath, southern agent for American Paper Tube Company and Riggs & Lombard, Inc., has also been appointed southern agent for Parks & Woolson Machine Company, Springfield, Vermont, manufacturers of cloth room machinery. Mr. Culbreath is contacting the textile trade in the entire South, with headquarters in Charlotte.

CURRENT TEXTILE TOPICS

Sound Mill Operation Proves Good Policy

COTTON manufacturers can look back upon the latter part of 1939 as a period demonstrating the value of sound operation by the industry as a whole and also as an object lesson in digressing once more to some extent from such operation. The general adoption of curtailment last summer put the mills in the way of making profits on a broad volume of buying. Then the urge to promote business when it was normally dull threatened to undermine profit making.

Whether the industry will continue to operate in the black through the year now under way apparently is up to the individual manufacturer. It takes only a small amount of business in the goods market to establish a price, especially when it is a concession. This circumstance, cited for years in the gray goods trade, was again a moot topic when the stability of the whole market after the early fall was shaken as a whole by unnecessary reduction in some staples.

We say "unnecessary" because the mills had backlogs to keep them running actively into the current year. By the same token, buyers were well covered for immediate needs and waiting for signs of consumption volume. Concessions would not increase the ultimate volume. On the other hand, they would, and did, cause deferment of new buying after buyers were aware of new needs. Buyers skeptical of prices are slow to operate at all times.

Healthy Fears A Good Augury

General business conditions the last of December were such as to create a feeling among economic observers that 1940 would not get the sharp reaction before spring rather commonly forecast several weeks earlier. In contrast with ordinarily deterrent business fears, the fears of the last quarter of 1939 that gave way in large part before the end of the year were incident to a period of prosperity. The fear was that possibly it had been overdone.

As a result of this healthy fear, or conservatism, buying of commodities tapered off and a slow period of quiet waiting for business to absorb the resulting heavy production ensued. Whether growing inventories would pile up goods and create a new dull period for manufacturers in a few months was the dominant question. Then came gradually a consciousness that consumer buying power was growing and that goods were going rapidly into consumption.

It was a favorable circumstance that caution followed the September upsurge, for nobody wanted a runaway market. It was more favorable that the quiet period of selling (not manufacturing) demonstrated the idleness of fears that the war might bring another boom and pave the way for a debacle similar to that after the World War. When the realization came that the industrial activity was substantially based on domestic business, opinion turned to the idea that the year-end decline would be less than usual.

Finished Goods Strong Point

December brought finished cotton merchandise to the forefront as a strong element in the situation affecting cotton mills. Ordinarily a month of slackening business, it had been anticipated that December would show a decline in the call for various items of finished cottons and request for deliveries to be deferred until January. Yet up to the middle of the month at least, this tendency was subnormal.

During November the movement of finished goods was retarded, giving rise to the belief that the year-end dullness would be experienced as usual. But it was found early in December that buyers evidently needed practically all the merchandise on order, indicating that reserve supplies were at a minimum. The implication was that converters of finished cloths were absorbing well the large yardages of gray goods bought early in the fall.

A best seller—made in Feather Flannel, a smooth wool-like fabric of Teca, Eastman's crimped acetate rayon.

Substantiating the indications of a broad consumption in gray constructions was the spurt of new buying toward the middle of December. And supporting the assertion that previous weakening of prices for some lines was futile, the market quickly stiffened when buyers began to place new orders in volume, albeit a sudden bullish development in raw cotton was the constructive factor that turned the tide.

World Cotton Markets Strong

Not since the beginning of the 1937-1938 season has the situation in raw cotton been so conspicuous a factor in the textile market. The break of the market to 7½ cents (New York spot) in the fall of 1937, under pressure of the largest crop on record in conjunction with a depression state for textiles, was followed by two seasons of low prices for the staple. Even in the September spurt on war news, the price got barely above 10 cents and then dropped back to around nine.

Beginning early in November, however, raw cotton began a definite rising tendency and a month later was assuming a very prominent place in commodity trading as a whole by virtue of a sharply rising trend to world prices for the staple. Whereas in November government officials were forecasting a ten-cent market by spring, the price in New York was considerably above 11 cents before the middle of December.

Last September cotton was one of the commodities least affected by the war. Three months later it was definitely affected by war and more bullishly inclined than most other commodities. The brief spurt in the first instance nullified for its short time the rising movement of prices in cotton goods. The strong upward movement in November was more strikingly a force for narrowing margins over cost in cotton manufacture.

Production Against Orders

By the first of December it was found that margins of mills were reduced to worse than those prevailing just before the start of war abroad. Impatient sellers of staple goods had been pressing for new business, notwithstanding heavy backlogs. This caused a fairly sharp decline from late September to early December, in the face of a definite upward movement in November when the easing of goods was most conspicuous. Typical of the contrast is the following:

	Sept. 27	Dec. 11
38½-inch 64x60s	5 5/8	5 1/8
Raw cotton	9.18	10.85

Here is a case of rising costs of manufacture and declining prices for goods, with the chief effect of delaying business that would come to hand when buyers were ready. It was thought that the advantage accruing from the summer regulation of output by the industry at large would have lasting effect. Production against orders on bona fide demand, not induced by low prices, is the way of salvation for cotton mills.

New England Mill Situation

ACTIVE operations marked the situation for cotton mills of New England through the last quarter of 1939 and into the start of this year. Manufacturers over that period, however, found themselves faced by uncertainty for the most part. The broad schedules for mills were based upon early fall buying inspired by war and replenishment trading for the new year saw no appreciable volume until a spurt was realized in December.

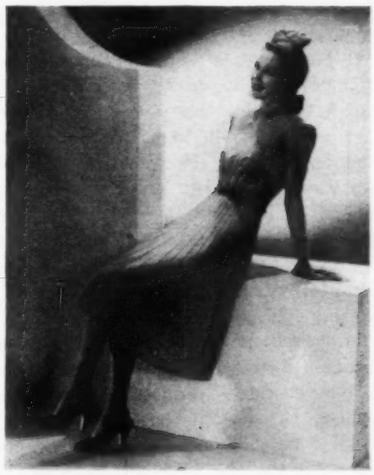
On the basis that a gray goods market often is made by the mills that will offer concessions to promote business in a quiet situation, the manufacturers of this district faced pressure upon prices for the specialties that constitute their mill output. When buying quickened in December, under the spur of a bullish cotton situation, these mills had to face a market that had receded without any weakening on their part.

Fine goods producers foresaw a period of slow buying, as a logical reaction to the extraordinary turnover in September, and they were prepared to withstand the inevitable bids at lower levels. Costs of production were not lower and there was no justification. It was even felt that buying would possibly be so light as to cause some temporary slackening of production early in this calendar year.

Accept Teaching of Experience

Experience as a teacher today has a general following by the mills of this district. As a leading spokesman for the industry stated to the representative of COTTON late in December, the manufacturers follow the policy of watching production and stocks very carefully. They were preparing, in the period of fall production, to curtail just as soon as it appeared that production would be going to stock.

It will be recalled that the fine goods division of manufacture took



This young lady is wearing a dress made in Koda Krepe, a Teca cloth with a sheer, crisp texture. Courtesy Tennessee Eastman Corp.

warning of the over-production in the spring of 1937. They have since adhered generally to a sound policy of production. This enabled them to take full advantage of the pick-up that finally came in September of last year, whereas some mills with accumulated stocks had first to dispose of them.

New England's hope is that its policy of regulation will become general, since this district cannot of itself stem the pressure against prices in a sluggish market. Fine goods may resist decline, but values all around are undermined if concessions are made in any division. On the other hand, a consistent maintenance of prices based upon costs, supported by curtailment if buyers hold back, would alleviate or eliminate the depressed markets of the past according to opinion here.

High Cotton Consumption

Statistics show that the mills in New England consumed in October 86,592 bales of raw cotton. This was 20.2 per cent above the total of 72,147 bales reported for September and 27.8 per cent more than in October of 1938. The total for ten months of 1939, 743,907 bales, was 26.2 per cent larger than in the corresponding period of 1938.

Through October and December only light bookings were made, but the national consumption of raw cotton at the highest monthly volume since April of 1937 reflected continued broad production in this district. Inventories in the hands of converters and distributors were reported not excessive.

While mills were conservative in their attitude toward the outlook, the middle of December brought an encouraging spurt in fine goods, along with other constructions. Producers were quick to point out the significance of the world upward trend in raw cotton and to quote firm prices for their cloths.

Export sales of cotton goods were reported to be expanding quietly, but this had little allure for New England, as most of the business was in coarse fabrics. The First National Bank noted that, while foreign trade may constitute a profitable outlet for a few individual companies, it always has been relatively unimportant to the industry as a whole.

Notes of the Mills

Adding to other reports previously of returning prosperous conditions in the mills the past few months, the Sagamore Manufacturing Company of Fall River paid a dollar dividend late in December. The significance of this is that the last previous payment was 50 cents in February, 1938.

Another sign of the times was a wage increase of ten per cent by the Southbridge and Sturbridge Printing and Finishing Companies of Southbridge, Mass. The management stated that this increase would make its employees the highest paid in the cotton industry. The two companies, operated by Golding Brothers Company of New York, form the fourth largest cotton printing unit in the country, with a payroll of more than a million dollars a year.

Federal court appointment of John W. Cussen as trustee for the Taber Mill Corporation, New Bedford, was made in December. The corporation had filed a petition for authority to reorganize under Chapter 10 of the Bankruptcy Act.

The financial statement listed assets at $902,556 and liabilities at the same figure. Although provided with plenty of orders the corporation has had insufficient capital to finance operations on a capacity basis.

More than 500 workers are employed in the plant. Above $120,000 in wages have been paid since the plant resumed operations under new management.

"THE SITUATION" as Seen Across an Executive's Desk

December 20, 1939

THIS HAS BEEN an exciting month in the textile industry and closes an exciting year, for the mills have run better, have paid more wages, and have used more cotton than in any previous years except 1927 and 1937. About 6,700,000 bales of cotton were manufactured into cotton yarn and cloth during the first eleven months of 1939—a 24 per cent increase over cotton consumption in 1938.

Improvement is Sound

Although some people firmly believe and give credit to the European war to this situation, others point out that increased cotton consumption was no spectacular over-night development but that cotton textile mills have enjoyed steady and consistently full operation time since the fall of 1938, with few exceptions. Among the latter was the Print Cloth Group which ran three shifts for a considerable period, building up excess stocks which forced them into a curtailment program. To this group the war purchases were a boon, as Worth Street early in September had the biggest day in its history, and before the Print Cloth Group went down again into the slump of overproduction another spectacular buying wave was felt: for example, 20 million yards were sold on December 8.

Looking at the textile industry as a whole we find that the cotton industry and general business activities run parallel and that both have seen better days in 1939 than during the past decade. Cotton-textile stocks have registered a small decline since the past month and considerable decline since the first of the year. For instance, stocks today amount to 4.3 weeks supply compared with just twice that much the same time for the previous year. These figures are based on average operation.

The *New York Times* seasonally adjusted index of mill activity was 141 per cent of estimated normal for the week ending November 25 compared to 137 per cent in the previous week and 127 per cent one year ago. Total cotton consumption for the past month was equal to the baleage consumed the previous month and 100,000 bales higher than the same month 1938 (687,000). It is understood that the total number of active spindles has now reached the highest level since November, 1937, and that mills are actually operating 98 per cent of capacity with additional employment being given to nearly 25,000 people.

The Subsidy Cut

One of the most important of the month's developments was Secretary Wallace's sudden announcement of an immediate cut on all export subsidy rates to approximately 50 per cent of the original schedule. The announcement was made at the close of the market December 5 and exporters were given until mid-night to report their sales made under the original rate. The result was that about 600,000 bales were sold after 3:00 P. M. December 5 to foreign markets. Three days later the announcement was made that the rates on lint cotton, card strips, and comber waste would be reduced 0.40 cents per pound net weight basis effective at once. This second cut should be compared with the original rate of 1.50 cents per pound. It is estimated today that over a million bales have been sold to foreign markets between those two closely timed subsidy rate reductions. The result of this, in the raw cotton market, has been bedlam. The market has shot up 65 to 70 points in a few days making a total increase of about 150 points since the crop started moving in September.

Certain types of cotton are in the shortage bracket. For instance, there is no 1 3/32-inch of the Delta variety. Spinners accustomed to using that staple must go to irrigated growths or change over to different lengths. Blanket manufacturers face a definite shortage in cotton from China and India due to the Chinese crop failure and the excessively high prices existing on India cotton which is selling in some cases for $20 a bale over American cotton. A shortage exists also in the longest domestic staple, Sea Island, due to terrific September storms, and it is understood that recent sales of this cotton were at 33 cents a pound.

Raw cotton merchants have done the largest business on export business in many years and it is estimated that with the anticipated 6½ million bales to foreign markets plus 7½ million bales for domestic use at least 2½ million bales over and above this normal crop will be consumed and this excess amount must be drawn from the loan.

Certificate Plan--A New Processing Tax?

One of the most persistent people in the world is the Mr. Secretary Wallace. He has repeatedly tried to enact processing taxes in order to carry on his benefit program for the cotton farmers. Despite his continued defeats at the hands of Congress he is again barnstorming the West promising glorious results from the Income Certificate Plan, a revised edition of the old Domestic Allotment Plan, buried these 12 years. It is easy enough to see why he wishes to dig up this corpse. In his own words, "This plan has the advantage over the processing tax in that the money would not go through the U. S. Treasury at all." Thus he prom-

Will Clayton (with applicator), well-known cotton broker, spreading top dressing on the cotton paving used on the parking lot of Sears Roebuck's Houston (Tex.) retail store. At the extreme left (without hat) is J. J. Brown, cotton technician for the government. Next to Mr. Brown is H. P. Newton of the Southern Regional Research Laboratory, New Orleans. Other gentlemen include representatives of the press and Ex-Governor Hobby of Texas . . . . . .

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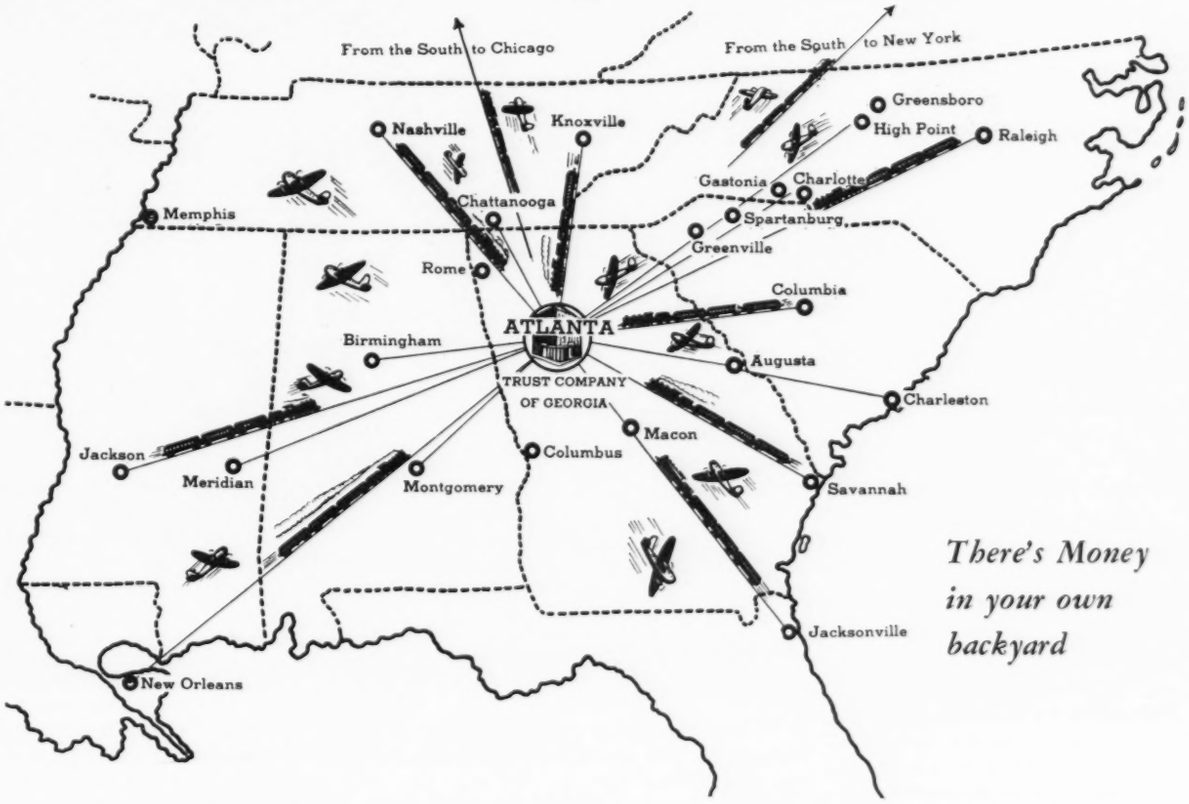

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ises a harvest of dollars to the farmers, the money to be raised without taxation—a nice piece of Santa Claus work for an election year.

The actual method of operation connected with the Certificate Plan is this: The Secretary of Agriculture will estimate prior to the beginning of the cotton fiscal year, August 1, what the probable crop will be and the requirements for domestic mills. He then estimates what the pegged price should be and takes the difference between parity or the cost of production (whichever is higher) and the market price and this figure is that at which certificates will be sold. For instance, if cotton is 10 cents and parity 16 cents the certificate would cost the manufacturer 6 cents per pound. Certificates are to be purchased by the processor in advance of the processing or, in other words, when you buy your cotton you buy the certificate, cash on the barrelhead. Then, this certificate income is divided among the farmers as their benefit payments.

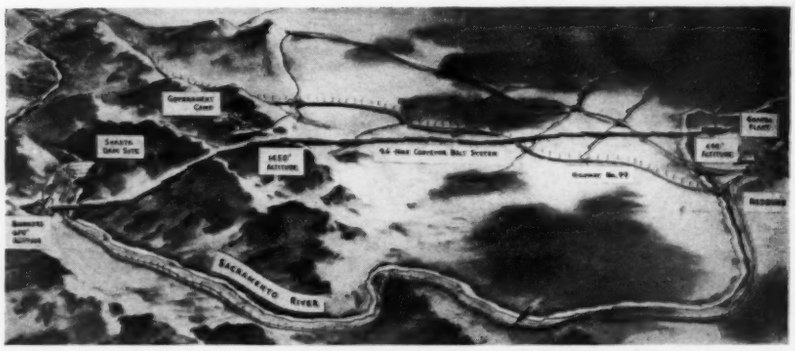
This is one of the most dangerous pieces of legislation ever devised for the detriment of the manufacturer and the benefit of the farmer. Wallace feels that even if the plan is contested and goes to court, with the New Deal Supreme Court Bench as it stands today the plan would be ratified. For that reason it is up to every individual cotton manufacturer, every worker in the cotton mills, and all other interested parties to fight this thing tooth and toe-nail before it gets under way. Congressman and Senators should be advised of the hazards which lie in wait for manufacturing concerns if confronted by this bill, the newest brain child of an idealistic dreamer.

The Income Certificate Plan is purely and simply a processing tax and all manufacturers familiar with the troubles in connection with the last processing tax will want to eliminate this one before it is enacted. The one big hazard of course would be the increase in cotton prices through this certificate plan to the point where the consuming public would be forced to switch to synthetic fibers instead of using cotton textiles.

The Freight Rate Decision

The decision of the ICC on freight rates from South to North is one of the most momentous decisions affecting textile plants in many months. It is the climax of a long struggle between the South and the North. The ICC by a 5 to 4 vote on November 30 ordered railroads to establish a new basis of rates on Southern manufactured and processed goods moving into the North. It stipulated that these rates be comparable to those now effective on goods shipped from Northern points, mileage being considered. This has been the great bone of contention in the textile industry for years and the handicap of freight rates has been severe on southern manufacturers. These rates were actually set during reconstruction days and it has certainly been inexcusable that they have held as long as they have.

Arguments on the freight rate hearings will be resumed in Washington January 11 before Examiner Pine. It is very probable that the decision outlined above will tie in with the January hearing and that the ICC may be able to proceed further in the Rate Adjustment program at the close of the trial.



This shows an artist's sketch of the world's longest conveyor belt system, from Redding, Cal., to Shasta dam, a distance of 9.6 miles. Contract for the belt system has been awarded The Goodyear Tire & Rubber Company, Akron, Ohio. The special fabric to be used in the belt system is being manufactured by Callaway Mills of LaGrange, Ga.; the belt will require one thousand bales of long staple cotton, providing the backbone for the 9.6 mile conveyor system.. Contract calls for the manufacture of the 20 miles of 36-inch wide, 6-ply, rubber covered, cotton belting. The conveyor will haul sand and gravel.

The system will involve the use of 26 separate, endless-vulcanized belts, each approximately three-quarters of a mile long, motivated with a 200 hp. motor and turning on 48-inch head pulleys.. The conveyor system will be erected on wooden bents varying in height above the ground from 4 to 90 feet and will require the use of 12,500 steel troughing idlers.

Towels With Coffee

A new promotional plan involves distribution of 3 million cotton bath towels through 30,000 grocery stores as premiums. The project is being sponsored by the National Cotton Council and the W. B. Reilly and Son Coffee Co. and will be extended over 90 days, it is understood. The idea is that a pair of 22x44 inch Cannon bath towels are given away with four Louisanne Coffee or Tea vouchers plus 29 cents cash.

This voluminous premium project is the result of a trial balloon plan last summer in which the Reilly Co. gave away 700 towels in the New Orleans area. This plan, though carried through by an individual concern, is excellent cotton promotion and excellent advertising for a good brand of both coffee and towels.

Cobb Manager of Territory for Arnold, Hoffman

It has been announced by Arnold, Hoffman & Co., Inc., that W. Chester Cobb has been made manager of the North Carolina territory of the company, succeeding Frank W. Johnson, who recently retired. Mr. Cobb's headquarters will be at Charlotte, N. C. (P. O. Box 1268).

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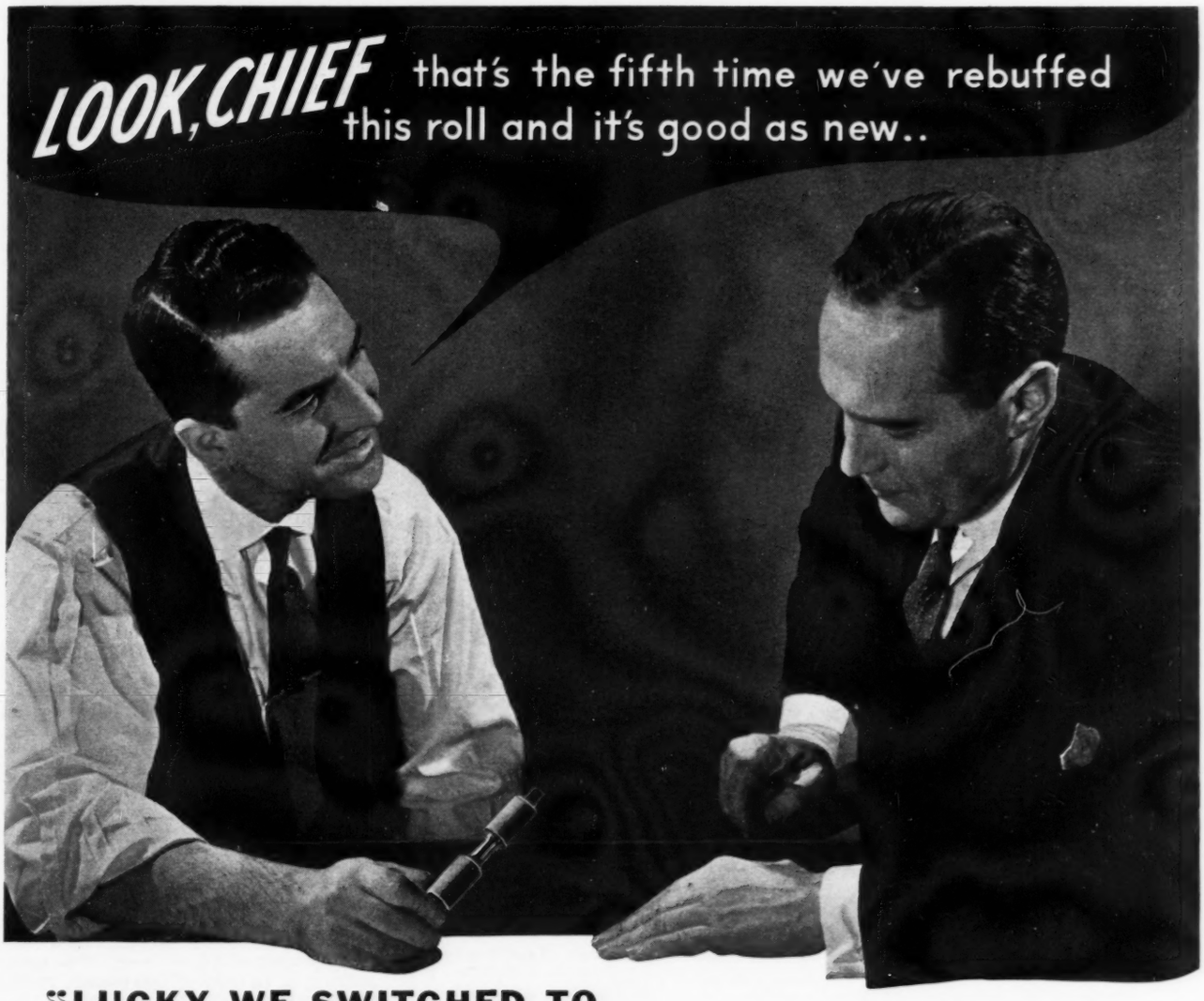
In December "Textile Research"

The papers and an outline report of the discussion on "Wool Fibre Damage in Processing," which was the subject of a conference held last month by U. S. Institute for Textile Research, Inc., are published in the December issue of *Textile Research*. The conference declared the subject worthy of research, and authorized W. D. Appel, chairman of the Institute's Research Council, to appoint a committee to draw up a research program and to report on ways and means for conducting the project.

The December issue also contains a full report of the proceedings and addresses at the Institute's tenth annual meeting, among the features of which were reports on the progress of researches being conducted by the Textile Foundation and the Institute.

Another notable feature of the issue is the progress report by Kenneth B. Fox, a research associate of the Textile Foundation, on "Double Variation Method for the Determination of Refractive Indices of Textile Fibres". It indicates that there is very definite evidence that the new method will prove successful, and provide an accurate scientific means of fibre identification, of aid in fibre structure study, and of indicating fibre damage.



"LUCKY WE SWITCHED TO ARMSTRONG'S CORK COTS . . . THEY'VE CUT OUR ROLL COVERING COSTS IN HALF!"

SAVINGS are assured when you install Armstrong's *Extra Cushion* Seamless Cork Cots. For every cot can be rebuffed three to four times at a cost of *only one half cent a roll.* This means a total life equal to the combined lives of *four to five* ordinary roll coverings!

But that's not the only saving you get. There's quicker, cheaper assembly. Furthermore, cork—by the very nature of its structure—lasts longer.

Then, too, mills using these cots produce better yarn. Cork's high coefficient of friction makes yarn stronger and more uniform. It gives you better running work . . . assures fewer top roll laps, less end breakage, and far less clearer waste. Eyebrowing, also, is practically eliminated.

And here's the proof of the pudding! Over 7,000,000 active spindles are now running on Armstrong's Seamless Cork Cots. Let an Armstrong representative show you how your mill can cut production costs and step up quality with a change-over to cork. Ask him to show you actual production figures of mills spinning your range of numbers on cork cots. Or write Armstrong Cork Company, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

Comment on the Cotton Market

New Orleans, December 16, 1939

CULMINATIVE developments of a bullish nature influenced the cotton market to advance sharply, during the first half of December, values reaching the highest level attained since 1937. Subsequently prices lost about $3.00 per bale, but the decline was of short duration, revival of buying causing the market to recover half of the temporary loss.

Much stress was laid on prospects for a large export movement and large domestic consumption, to the reported virtual cotton crop failure in China, to the further reduction in the U. S. crop, and unfavorable crop advices from India and Egypt.

Foreign markets—Bombay, Alexandria and Liverpool—experienced sensational advances, to far above their normal relative levels to American cotton. The stronger markets abroad were attributed partly to the strength and rise in the value of jute in India, which was used so much to make sandbags for protection from bombs in the war areas of Europe. Jute was so dear, cotton (according to report) is now being used as a substitute for jute. It is also possible, if not probable, that some cotton is being lost at sea due to mines and submarines sending so many ships to the bottom of the ocean.

Owing to scarcity of tonnage—with many foreign ships being pressed into war service—it is likely that other war conditions have prevented much cotton from leaving South American countries and perhaps India.

Therefore, dear jute, the short cotton crop in China, difficulties in shipping cotton from the usual supply sources of other cotton-producing countries, threw the demand for the staple principally to the United States where the crop is turning out less than expected and where consumption this season may be of record-breaking proportions.

Recently, Secretary Wallace was credited with saying that since the institution of the export subsidy July 27 some 5,700,000 bales have been exported or ear-marked for export under the subsidy plan. Thus far this season or to December 15, 2,792,000 bales have been exported from the United States versus 1,863,000 to corresponding date last season. Under the circumstances, the outlook for exports during the remainder of the season is good. Some in the trade look for exports this season to total 6,500,000 bales versus 3,623,000 for the whole of last season and 5,954,000 season before last. Of late London was credited with stating that 50 neutral ships had been booked for transport of American cotton to England and France. This good showing for exports is due largely to the inducement offered by the original subsidy of $7.50 per bale, which however due to the near exhaustion of funds for this purpose has been cut to 20 cents per bale. Nevertheless, the demand for the staple continues good, which speaks well for the future.

On the basis of probable domestic consumption of 7,500,000 bales and probable exports of 6,500,000, which makes a total of 14,000,000, it looks as though the trade will likely have to draw on reserves, Government loan cotton, etc., to the extent of about 2,500,000 bales since the indicated crop points to about 11,500,000 running bales.

The future course of values, therefore, is apt to depend largely on the attitude of farmers as to the price they will accept for old crop cotton now tied up in Government loans. There are rumors to the effect that some loan cotton has come on the market already.

Recently American farmers voted in favor of the continuance of Government cotton crop control for 1940.

This year's acreage harvested was estimated at 23,928,000 acres. The acreage in cultivation July 1 was placed at 24,832,000, there having been an abandonment of 3.6 per cent. The estimated crop in bales of 500 pounds gross weight was 11,792,000 bales versus 11,943,000 bales in 1938.

There continues a good demand for spots and there is improvement in the demand for cotton goods. English and French spinners are busy, with large bookings to work on, largely Government orders. With only about one half of the cotton sold under the subsidy plan exported thus far, and new business likely to follow, there is every reason to look forward to the probability of large shipments from the United States after the New Year, and as trade continues good in America, there is cause to expect the continuance of heavy consumption by American cotton mills.

With cotton and grain selling at better prices now, which means much to the South and West, and indirectly to the North and East, and with Europe buying and paying cash for war requirements in the United States, the trade outlook for America for 1940 appears to be good. Therefore, it looks as though the New Year will get off to a much better start than last year, with prospects of business continuing favorable, perhaps throughout the year, although some little reaction is possible after the holidays. There is satisfaction in witnessing the predicted boom in U. S. business, quoted in these columns last summer, and it is to be hoped that good business will continue throughout the nation.

AMERICAN COTTON

August 1 to December 15 — Bales—	This season	Last season
Brought into sight (marketed)	9,908,000	8,559,000
Exports from the U. S. inc. Canada	2,792,000	1,863,000
Spinners takings, North and Canada	832,000	698,000
South	3,830,000	3,207,000
Foreign excl. of Canada and Orient	(*)	1,284,000
Orient	295,000	336,000
World spinners takings	(*)	5,525,000

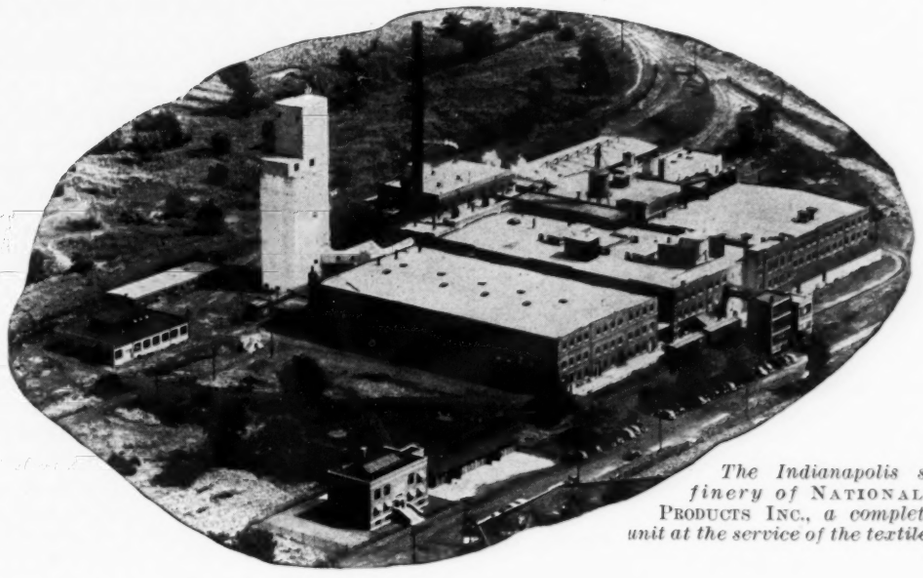
WORLD'S VISIBLE SUPPLY OF COTTON

December 15— Bales—	This Year	Last Year
Stocks at U. S. Ports	3,218,000	3,094,000
Stock at 102 Interior towns	4,861,000	4,841,000
Afloat to and at ports of Europe	(*)	1,238,000
Afloat to and at ports of Orient	325,000	206,000
Totals	(*)	9,379,000
Totals of other kinds	(*)	2,035,000
Total of all kinds	(*)	11,414,000

(*) Not available account of war conditions.

CENSUS REPORT

United States— Bales—	This season	Last season
Consumption of lint in cotton-growing States, November	610,000	503,000
Consumption of lint in New England States, November	89,000	78,000
Consumption of lint in All other States, Nov.	20,000	15,000
Consumption of lint in United States, Nov.	719,000	596,000
Consumption of lint in Cotton Growing States, 4 months	2,256,000	1,891,000
Consumption of lint in New England States, 4 months	325,000	280,000
Consumption of lint in All Other States, 4 months	78,000	62,000
Consumption of lint in United States, 4 mos.	2,659,000	2,233,000
Mill stocks, November 30th	1,783,000	1,714,000
Stock in public storage and warehouses, Nov. 30	15,485,000	15,592,000
Stock in mills, public storage and warehouses, Nov. 30	17,268,000	17,306,000
Stock in mills, public storage and warehouses, Oct. 31	16,933,000	16,817,000
Active spindles in Cotton Growing States, Nov.	17,099,000	17,024,000
Active spindles in New England States Nov.	5,052,000	4,802,000
Active spindles in All Other States, Nov.	623,000	621,000
Active spindles in United States, Nov.	22,774,000	22,447,000
Active spindles in United States, Oct.	22,659,000	22,113,000



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From our newly-modernized starch refinery at Indianapolis, we now offer you a complete line of Corn Starches for warp sizing, printing, finishing, and every textile purpose.

These Starches are of highest quality and absolute uniformity, having been refined under our rigid system of control and highly specialized methods.

The services of our Textile Research Staff—a group of men well versed in the uses of starch in every phase of the textile industry—are at your disposal.

NATIONAL STARCH PRODUCTS INC.

820 GREENWICH ST., NEW YORK—CHICAGO—PHILADELPHIA—BOSTON—SAN FRANCISCO—*and All Principal Cities*

NEW EQUIPMENT and MATERIALS

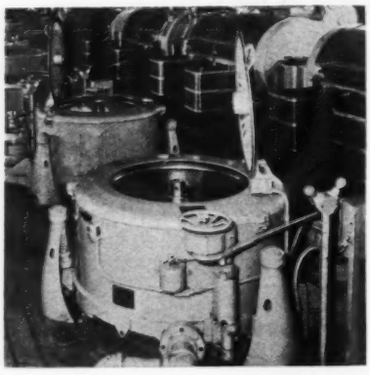
End Shields for Motors

U. S. Electrical Motors, Inc., Los Angeles, Cal., have made available motors with unimount end shields which have a flat surface to facilitate the mounting of pumps and other directly driven equipment, and for mounting magnetic brakes. They may be assembled on either end of the motor and can be used to mount a footless motor to a machine frame if desired. Obtainable in a number of standardized outside diameters, the end shields are said to eliminate the necessity for an adaptor.

◆

High Speed Whirlwind Extractor by Fletcher

Fletcher Works, Philadelphia, Pa., has announced a new high speed whirlwind extractor, with which the running time is said to be frequently reduced by one-half or more. The new machine has a stainless steel basket, with the top ring and bottom castings being heavily galvanized. The weight of the entire machine is used to compensate force of unbalanced loads, and adjustable springs keep oscillation in horizontal plane and provide stability. Other features are that it is easy to load and unload, requires less floor space, and is built absolutely smooth, with no rivets, flanges, or other projections from top to bottom.



High speed extractor

◆

Fluorescent Lamp

Hygrade Lamp Division of the Hygrade Sylvania Corporation, Salem, Mass., has announced the Miralume HF-100, a fluorescent lamp for industrial purposes. It is said to have increased lighting efficiency and to permit a choice of the quality of light. According to the manufacturer, the stroboscopic effect is practically eliminated; the starters are easily accessible. The new lamp has a built-in power factor correction.

Another new lamp made available by the company is the Miralume HF-200, for commercial and office installations.

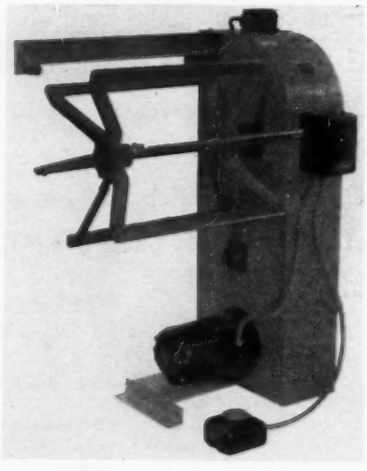
◆

Skein Reeling Machine

Fidelity Machine Company, 3908-18 Frankford Ave., Philadelphia, Pa., has announced a new self-contained skein reeling machine, which is said to show important savings in skein reelings. It is a self-contained unit with individual motor control. The machine occupies a floor space of only 16½x32 inches and has an overall height of 42 inches. The reel shaft is 30 inches above the floor. It is manufactured in two sizes, one for skeins up to 60 inches and the other for skeins from 61 to 75 inches.

The unit is driven by a ⅛-hp. brakemotor which can be run from the light circuit. The drive mechanism is totally enclosed, insuring safety and avoidance of dust collection. Applied to the top of the machine is a yardage counter which can be set for any predetermined skein yardage, which automatically stops when the correct yardage has been reached. The brakemotor stops the machine instantly.

The reel holds five skeins and one of the reel spokes is collapsible, permitting quick removal of all skeins. The motor furnished with the machine is of the quick starting type, driven through V-belts.



For skein reeling

◆

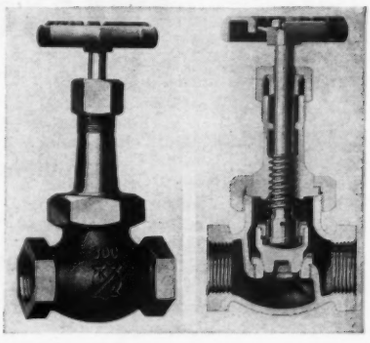
Sizing Compound for Spun Rayon Warps

E. F. Houghton & Co., Philadelphia and Charlotte, has developed a new tested sizing compound for spun rayon warps and mixtures. Known as Houghto Size SR, it is said to work well with any type of starch or gum used for spun rayon sizing. According to the manufacturer it produces high breaking strength, elasticity, increased weave room efficiency, and easy boil-off. From 6 to 7 per cent of the new compound is employed in the sizing formula; the brilliance of dyed warps is not affected by the softener.

◆

New Valves

The Kennedy Valve and Manufacturing Company, Elmira, N. Y., has made available a new line of bronze globe and angle valves with plug-type discs and renewable seat rings for close control in throttling service and for general heavy duty. The plug type disc and renewable seat ring are both of copper-nickel alloy, the seat rings being made of a harder composition than the disc. The angularity and length of the disc and seat ring have been proportioned to minimize wear at small openings and to permit tight closure even if the faces are partially damaged in service; each seat ring is matched to its companion disc to assure full bearing surface over the entire contact area of each. The stems have 60,000-pound per square inch tensile strength with acme standard threads, and have rounded stem head to permit self-centering of the disc.



Valves

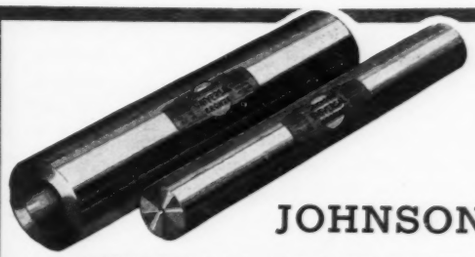
◆

Georgia Men to Meet at Sea Island May 16-17

The Cotton Manufacturers Association of Georgia will meet this year, as usual, at Sea Island, the date having been set for May 16-17, Thursday and Friday.

ONE *dependable* SOURCE FOR ALL YOUR SLEEVE BEARING *requirements*

Here is a *complete* sleeve bearing service as near to you as your telephone. Johnson Bronze Distributors are located in every principal industrial center. Each carries representative stocks for your convenience. Their service is supported by eighteen warehouse stocks — all so that you can secure your needs when and as wanted, without delay. Try us on your next order. Give us the opportunity to prove our remarkable service . . . the bearings will prove their quality through performance.



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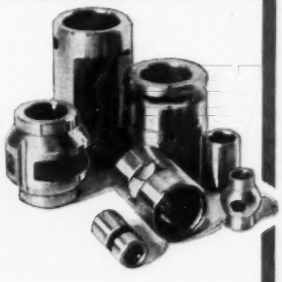
Over 235 Types



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Cast in a high lead bronze. Correct in alloy, design and tolerance. Shipment made the same day order is received. Try a pair in your toughest application. Convince yourself of their high quality.

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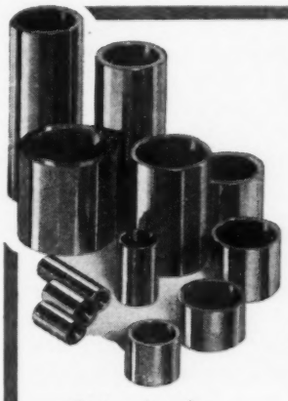
BEARING BRONZE

A new and unusual self-lubricating bearing. Contains LEAD, GRAPHITE and OIL — up to 35% by volume. An exclusive process of PRE-ALLOYING the basic materials guarantees uniform structure, uniform strength, even distribution of pores. Now available from stock in a large assortment of sizes.



GENERAL PURPOSE BRONZE BEARINGS

Over 800 sizes

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The right size — in any quantity — right off the shelf into your shop with no delay. Low in unit cost — high in performance and life. Cast in S.A.E. 64 — 80-10-10. Machine easily — with any type of oil grooving added. The best general purpose bearing bronze available.

Write for a COMPLETE CATALOGUE

All of the items listed on this page are available from stocks — conveniently located. Write for a copy of our latest catalogue — and the location of your nearest distributor. Good service with quality bearings awaits you on your next order.

JOHNSON BRONZE CO.

530 South Mill Street

NEW CASTLE, PA.

Sleeve BEARING HEADQUARTERS

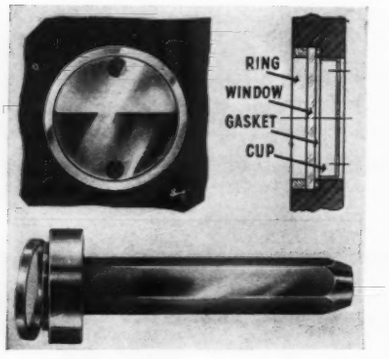
Vulcalock Cements Now Sold on Restricted Basis

The B. F. Goodrich Company, Akron, Ohio, has announced that its line of Vulcalock cements, which were previously sold only under license agreements, has now been released for sale on a restrict basis.

◆

General-Purpose Oil Window

Bijur Lubricating Corporation, Long Island City, N. Y., has developed a new sight oil window which is said to afford improved visibility. It is offered for general use in connection with oil reservoirs, containers and lubricators; it is a self-contained unit, conveniently installed in a simple bored opening, readily provided in the design of machine casting or part. The oil window consists of ring, window, gasket, and cup, all fitted snugly into a metal pocket. Standard sizes of the window, specified according to the diameter of aluminum reflector face, are ¾-inch, 1 1/16-inch, and 1 5/16-inch.



Oil window

◆

New Universal Tension

Robert Reiner, Inc., 550-64 Gregory Ave., Weehawken, N. J., has developed the new No. 990 Universal tension, which is said to enable the finest silk thread or the coarsest wool to be worked at the highest or lowest speed without changing or re-setting the drag device, thereby guaranteeing uniform yarn tension. It is adaptable to almost any standard creel. According to the maker, it is easier and quicker to thread and the thread cannot fly out.

◆

Koroseal Paint

The B. F. Goodrich Company, Akron, Ohio, has announced a new Koroseal paint, designated as No. 495 Korolac, the name covering solutions of the plasticized poly-vinyl chloride whose basic materials are coke, limestone and salt. A Korolac primer for use with the new paint is also introduced. The new paint gives a semi-glossy black finish and is recommended wherever extremely corrosive conditions disqualify any other kind of paint or coating. Applied to metal surfaces after they are prepared as for any other kind of paint or lacquer, the primer forms a strong bond between the Korolac and the metal itself. Korolac No. 495, when thoroughly dry, will withstand all acids, alkalies and salts in concentrations commonly met with in industry, up to temperatures of 150 degrees F. Both the primer and the paint can be applied by brushing or spraying.

◆

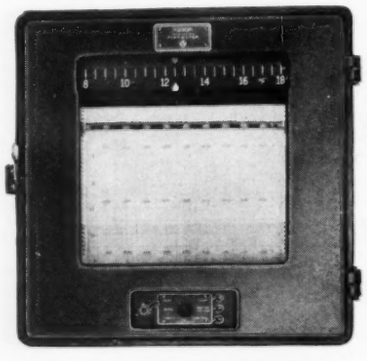
Corrosion-Resistant Treatment Protects Bearing Units

The Fafnir Bearing Company, New Britain, Conn., has developed a process whereby exposed parts of ball bearing transmission units are being chemically treated to resist corrosion, without change in their physical properties or dimensions. The process involves the formation of an oxide-layer which penetrates .0002-inch to .0003-inch into the surface of the metal, without changing its external dimensions. This protective layer, really a part of the metal itself, does not chip or peel, and is unaffected by temperature. According to U. S. Navy salt-spray corrosion tests, the seals, shields and collars so treated resist corrosion 10 to 25 times as well as untreated metal. The treatment is readily recognized by the distinctive jet-black finish it imparts to the metal.

◆

Control Instrument

The Foxboro Company, Foxboro, Mass., has announced a new series of potentiometer recording controllers incorporating new features said to be unique in instruments of this kind. The controllers have an improved detecting mechanism, a new integral recording and control mechanism, and a new control system to provide maximum flexibility of use. Open-and-shut action or throttling action, with or without automatic reset, is available in the air-operated models of the new series of controllers.



Recording controller

Hoffman Assistant to President of Link-Belt

Ralph M. Hoffman, vice-president and sales manager of the Link-Belt Company Pacific Division, San Francisco, Cal., for the last 8 years, has been appointed assistant to the president of the parent organization, Link-Belt Company, with headquarters at the company's general office at 307 N. Michigan Ave., Chicago. Mr. Hoffman is a graduate mechanical engineer of the University of Minnesota. He has been affiliated with the company since 1923.

Mr. Hoffman

◆

Oil-Immersed Panelboards

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has made available new oil-immersed panelboards, using thermal trip branch circuit breakers, for the protection of lighting circuits in locations exposed to corrosive elements and explosion-hazardous atmospheres. A new thermal-trip breaker has been developed for these panelboards to insure practically constant tripping characteristics regardless of temperature changes. The new breaker has a compensating bimetal mounted outside the chamber of the breaker frame in which the main tripping bimetal is enclosed. This is affected only by the general temperature of the whole tank of oil. The breaker is compensated within commercial limits permitting zero to 10 per cent decrease in rating when the surrounding oil temperature is 140 degrees F, and zero to 10 per cent increase in rating at oil temperature of 10 degrees F.

◆

Brooks Represents Foster Machine Co. Exclusively

Fred P. Brooks, for the last several years representative of several equipment manufacturers in the South, has severed his other connections in order to represent Foster Machine Company, Westfield, Mass., exclusively. He will handle sales for Foster in Georgia, Alabama, Tennessee, and part of South Carolina. His address is 406 South Candler St., Decatur, Ga. Webb Durham is southern manager for the Foster Machine Company.

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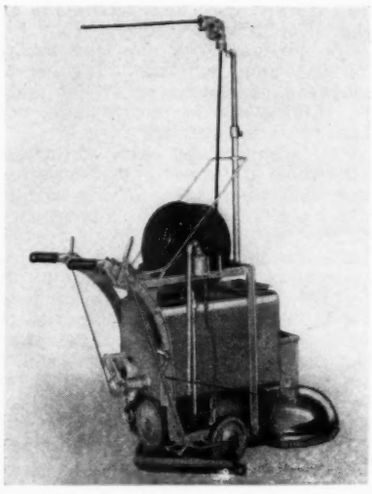
You'll Have CLEANER FLOORS with Lawlor Model 20-C



MODEL 20-C
Combination Scrubber and Water Vacuum Pick-up

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- It's a combination scrubber and water vacuum pick-up!
- It's high on efficiency—and low on expense!
- We'll gladly demonstrate, and
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- Without obligation!

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THE SELIG CO.
QUALITY HYGIENIC SANITARY PERFECTION TRADE MARK

MANUFACTURING CHEMISTS
New Orleans Established 1895 Dallas, Texas
Atlanta, Ga.

PERSONAL AND OBITUARY

W. N. MATLOCK has resigned as superintendent of the Pacolet Knitting Mills Company, Lynn, N. C., to become superintendent of the unit of the Elliott (N. C.) Knitting Mills that is located in Havana, Cuba.

JOHN D. SIEWERS has been promoted from assistant superintendent to superintendent of the Washington Mills Company, Fries, Va., succeeding J. W. BOLTON who passed away November 6.

D. C. TURRENTINE, JR., has been made superintendent of the Greer (S. C.) Plant of the Victor-Monaghan Company, succeeding C. M. HEMPHILL, who recently resigned because of ill health.

C. E. HENDRIXSON, treasurer of the American Viscose Corporation, has retired from active business life. He is succeeded by WILLIAM H. BROWN, secretary of the company.

ROBERT B. RIDDLE, Birmingham, Ala., has become assistant to G. M. VANN, superintendent and vice-president of the Eastman (Ga.) Cotton Mills.

Obituary

JOHN H. HILL, senior salesman and New England district manager for the past 20 years for the Steel Heddle Manufacturing Company, and connected with this company for 38 consecutive years, passed away suddenly as the result of a heart attack at his home in Providence, R. I., November 22. He was 75 years of age, but was active up until the time of his death.

JOHN F. G. MILLER, vice-president of B. F. Sturtevant Company, Hyde Park, Boston, Mass., passed away suddenly on December 9 as the result of a heart attack. He was 62 years of age. Mr. Miller had been associated with the fan and air conditioning industry for 36 years.

T. B. STACKHOUSE, 82, of Columbia, S. C., passed away December 9 as the result of a fall in his bedroom. Mr. Stackhouse organized the Dillon (S. C.) Cotton Mills in 1900 and was its first president.

MELBOURNE A. H. BRAHAM, secretary-treasurer of The Arkansas Company, Newark, N. J., passed away suddenly on December 1. He was 47 years old and had been associated with the company for 27 years.

PERCY F. KINGSBURY, former general manager of the Passaic (N. J.) Print Works, passed away about the middle of December as the result of a heart ailment. He had been retired since 1936.

JOHN T. SHIPMAN, president of the Shuford Hosiery Mills, Hickory, N. C., passed away the early part of December.

DON HURLBURT, southern representative for United Elastic Corporation, passed away in Hollywood, Fla., November 2.

HENRY A. CAESAR, senior partner in H. A. Caesar & Co., textile factors, passed away December 10, following an illness of about two years.

(*Additional personal notes will be found on page* 80.)

Brendel Advanced with Manning, Maxwell & Moore

Louis H. Brendel, formerly assistant sales manager of the Hancock Valve Division of Manning, Maxwell & Moore, Inc., Bridgeport, Conn., makers of pressure gauges, safety valves, thermometers, and globe valves, has been made assistant to C. H. Butterfield, general sales manager of the company. Mr. Brendel's new duties will include the supervision of sales promotion and jobber relations for the Ashcroft American Gauge Division, the Consolidated Safety Valve Division, the American Schaeffer & Budenberg Instrument Division, and the Hancock Valve Division.

◆

Forney Director of Division for National Safety Council

R. L. Forney, formerly assistant to the managing director of the National Safety Council, 20 North Wacker Drive, Chicago, Ill., has been appointed director of the Council's Industrial Division, succeeding W. Dean Keefer, who ended 21 years with the Council to join the Lumbermens Mutual Casualty Company, as assistant to the vice-president in charge of safety engineering. His offices will be in Chicago.

◆

Rayon Story

Tennessee Eastman Corporation, Kingsport, Tenn., a subsidiary of Eastman Kodak Company, has prepared an interesting and profusely illustrated booklet entitled "The Story of Eastman Acetate Rayon". The booklet photographically illustrates the process of manufacturing acetate rayon and also includes a chart showing the manufacturing steps. Fabric swatches are included to show the versatile effects which can be obtained through the use of the company's acetate rayon yarn or Teca staple fiber, either alone or in combination with other fibers.

◆

Steel Heddle Acquires Benazet Company

Steel Heddle Manufacturing Company, with general offices and main plant at Philadelphia, has purchased and absorbed The Benazet Heddle Company of Philadelphia, manufacturers of round wire heddles, the business of which, however, has been more or less dormant for years. Steel Heddle has moved all of the machinery and stock to its large plant. All orders and correspondence intended for The Benazet Heddle Company should now be addressed to Steel Heddle Manufacturing Company, 2100 West Allegheny Ave., Philadelphia.

◆

Church Vice-President of Worthington Pump

Maynard D. Church has been elected vice-president of Worthington Pump and Machinery Corporation, Harrison N. J. He is also president of Moore Steam Turbine Corporation, Wellsville, N. Y., a subsidiary of Worthington, and in his new position will also continue to be in charge of Moore operations.

R. W. Towne was elected assistant secretary of Worthington.

◆

Wages for Wedding Bells

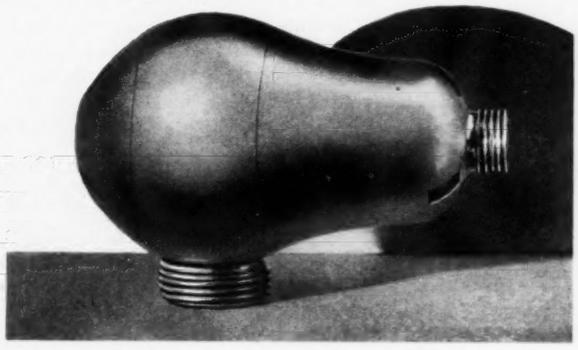
On Monday morning a man went to his foreman and said, "Boss, I got married over the week-end and I know without trying it that two can't live as cheap as one. So I feel like I ought to get more money than I'm getting. How about a raise?"

The foreman took one long look at the man and then said, "It's not my fault you got married! What makes you think you'll be worth more, now, than you were before?"

The disappointed and crestfallen bridegroom returned to his work realizing that the ringing of his wedding bells hadn't made much impression on his foreman.

The foreman probably lost a good opportunity to give this man a new incentive to improve his workmanship and his actual worth in wages to the company. If he had told the young man that now that he was married he had more reason than ever before to make himself more skilled and more efficient so that his services would justify higher wages, he would have been helping the man and his own department. He could have gone further and pointed out to him the specific ways in which he felt the man might improve his ability.

A capable foreman will never overlook an opportunity to give one of his men some new incentive or inspiration to improve his performance.—*"Management Information", Elliott Service Co., Inc.*



Only the Turbomatic is Diaphragm-atic

The Turbomatic Self-Cleaning Humidifier is the same old Turbo with a diaphragm.

Diaphragm actuation of cleaning mechanism is used because:

Its on or off action is more *positive*.

It calls for *fewer* and less complicated *parts*.

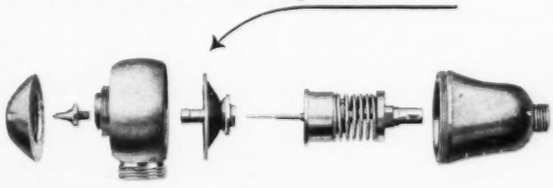
The whole device is *simpler*.

There is *no* likelihood of *sticking*.

And *no leakage* of expensive compressed air.

Being positive in action, with fewer parts, it is easier to care for, if after long, hard service it needs attention—as no doubt it may. Being simpler, with no likelihood of sticking or leaking, it is better. Diaphragm construction is what makes it so.

The Parks Turbomatic Self-Cleaning Humidifier is the same old Turbo, atomizing as only a Turbo can . . . but only the Turbomatic is Diaphragm-atic.



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PERSONAL NOTES

About Men You Know

DAVID D. CAROLL, Bennettsville, S. C., has been elected president of the Marlboro (S. C.) Cotton Mills, with J. A. BAUGH, JR., of McColl being elected vice-president and general manager, and E. H. MCGREGOR of Laurinburg as secretary. The foregoing men fill positions vacated by P. A. GWALTNEY and F. F. ADAMS, who recently became connected with the Plymouth Manufacturing Company, McColl, S. C. G. W. JOHNSON, formerly superintendent of the Bradford Mills, Prattville, Ala., has been made superintendent of the Marlboro Cotton Mills, which are operated by Hesslein & Company.

M. A. KIRKLAND, who has been supintendent of the Stark Mills of the U. S. Rubber Company, Hogansville, Ga., has been appointed superintendent of the Winnsboro (S. C.) Mills, succeeding G. H. LOKEY, who retired January 1. A. C. LINK is now superintendent of the Stark Mills. S. H. SHERMAN, formerly with the Winnsboro Mills, has been placed in charge of process development in the tire cord development department of the U. S. Rubber Company, Hogansville, Ga. L. D. SWEARINGEN is now technical supervisor at Winnsboro.

G. C. FURR, for over 20 years associated with Adams-Millis Corporation, High Point, N. C., in charge of full-fashioned hosiery production, has become affiliated with Burlington Hosiery Associates, Inc., with mills in North Carolina and Virginia. THOMAS J. WALLNER formerly president and treasurer of this corporation, has resigned and will give his full attention to his own mills, the Wallner Silk Hosiery Mills and the Virginia Maid Hosiery Mills.

R. E. HENRY has been elected president and treasurer of the Victor-Monaghan Company, with plants at Greer, Arlington, Walhalla and Greenville, S. C., succeeding the late T. M. MARCHANT. Mr. Henry is also president of Dunean Mills, Greenville; Aragon-Baldwin Mills, Whitmire and Rock Hill; and Watts Mills, Laurens, S. C. R. G. EMERY, who is associated with Mr. Henry in the operation of these plants has been made also vice-president of Victor-Monaghan Company.

CARL C. MATTMANN, JR., affiliated with A. M. Tenney Associates, New York City, has been elected president of the American Association of Textile Technologists. RUDOLPH SEMLER, Duplan Silk Corporation, is first vice-president; JOHN HAGAN, Callaway Mills, second vice-president; GEORGE URLAUB, Throwsters Research Institute, treasurer; and BERNICE S. BRONNER, Good Housekeeping Institute, secretary.

DR. OTTO MORNINGSTAR, who was graduated from the Alabama Polytechnic Institute, Auburn, Ala., and later studied, receiving his doctor's degree, and instructed at M. I. T., has become associated with the West Point Manufacturing Company, West Point, Ga., with headquarters at the central laboratory at the Shawmut (Ala.) Plant of the company, where he will do basic research on cotton fibers.

ROY E. BRADLEY, who has been in charge of the Greensboro, N. C., office of North America Rayon Corporation, has resigned to return to his brokerage business in Chattanooga. He is succeeded at Greensboro by H. B. SUMMEREL, who has been associated with North America Rayon Corporation for over 10 years.

ROBERT A. MCKAY of the Atlanta (Ga.) office of Wellington Sears Company, has been elected president of the Atlanta Textile Club. Other officers are H. C. ALLEN, JR. Sterling Textile Corporation as vice-president, and GARNETT ROBEY, Riverside and Dan River Cotton Mills, secretary-treasurer.

W. LEXIE DAVIS formerly associated with the Proximity Manufacturing Company, Greensboro, N. C., has become superintendent of the Edna Mills Company, Reidsville, N. C., succeeding E. P. COFIELD, who as noted, is now superintendent of the Erlanger Mills, Lexington, N. C.

--WILLIAM SYLVESTER, at one time connected with the Archer Hosiery Mills, Columbus, Ga., but more recently associated with the Hoover Hosiery Company, Concord, N. C., has returned to Columbus where he has been made superintendent of the Archer Hosiery Mills.

FOSTER BARNWELL has been elected president of the Abbeville (S. C.) Mills, succeeding H. A. HATCH, resigned. ROBERT CUSHMAN, formerly associated with the Stonecutter Mills, Spindale, N. C., has been made general superintendent of this plant.

J. C. FARMER, for some time superintendent of the Rockfish Mills, Hope Mills, N. C., has become superintendent of the Henderson (N.C.) Cotton Mills. LEE MCLEMORE, superintendent of the Bladenboro (N.C.) Cotton Mills, succeeds Mr. Farmer.

EARL CRENSHAW, who for two years has been superintendent of carding at the Lancaster (S. C.) Plant of Springs Cotton Mills, has accepted the position of superintendent of the Hampton Spinning Mills, Inc., Clover, S. C.

E. D. MILES, formerly overseer of carding at the Mathews Cotton Mill, Greenwood, S. C., is now general overseer of carding, spinning, and spooling at the Panola Mills Company, also in Greenwood.

ERNEST M. BOYS, formerly superintendent of the Pisgah Mills, Brevard, N. C., has accepted an executive position with the mills recently organized at Kinston, N. C., which is now known as Glen Raven (N.C.) Mills No. 2.

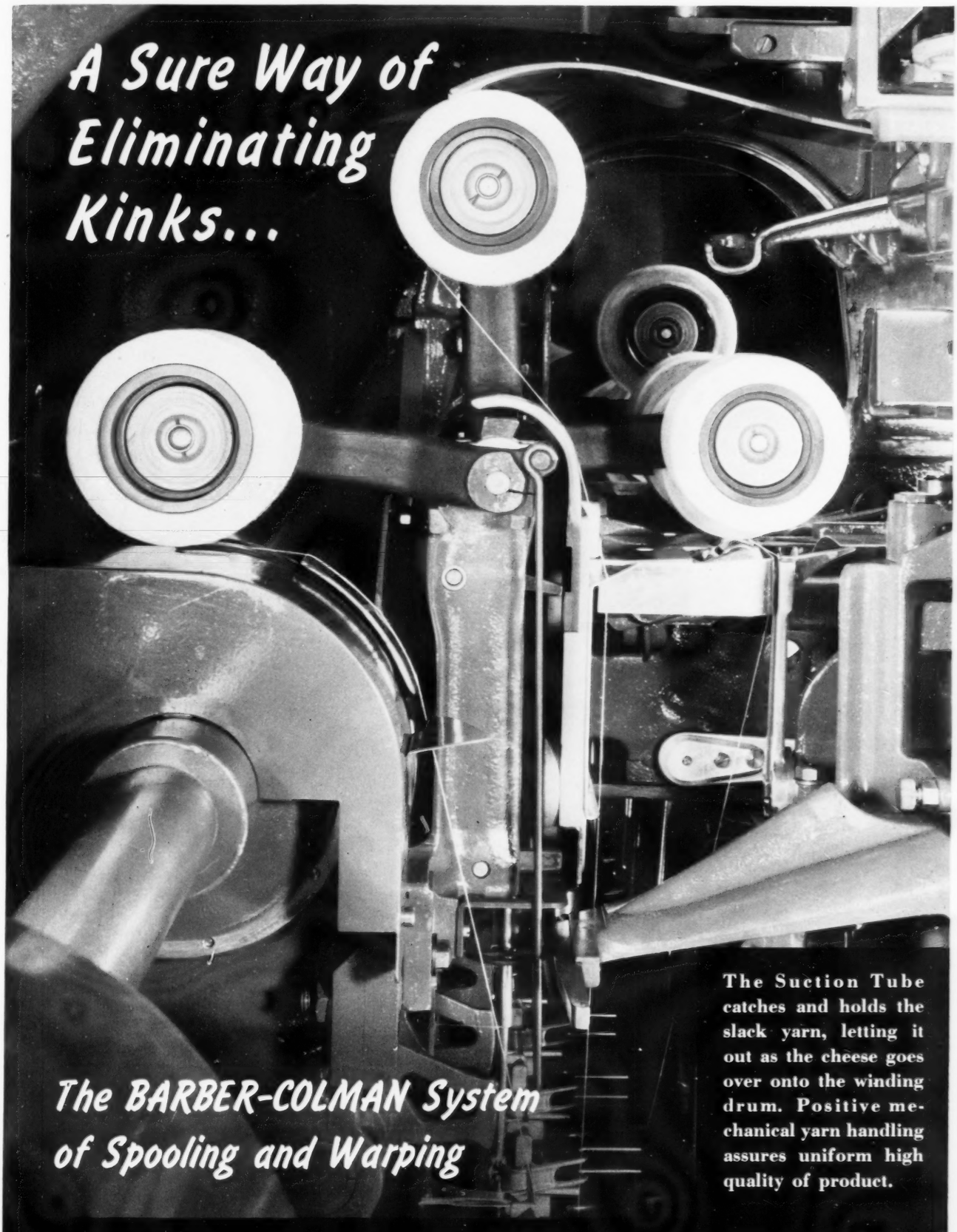
E. M. CUSHMAN has been made general superintendent of the Cartex Mills, Inc., Salisbury, N. C. Formerly he was superintendent of Judson Mills, Greenville, S. C.

ALBERT N. WHITESIDE has become superintendent of the Victoria Cotton Mills, Rock Hill, S. C., succeeding J. J. RAUCH, who now holds a position with the city of Rock Hill.

K. MCLAIN, formerly overseer of weaving at the Hannah Pickett Mills No. 2, Rockingham, N. C., has been promoted to superintendent, succeeding M. T. POOVEY, who recently resigned.

HERBERT A. CURRIER has been elected president of the yarn business of Waterman, Currier & Company.

(Additional personal notes and obituary items on page 78.)



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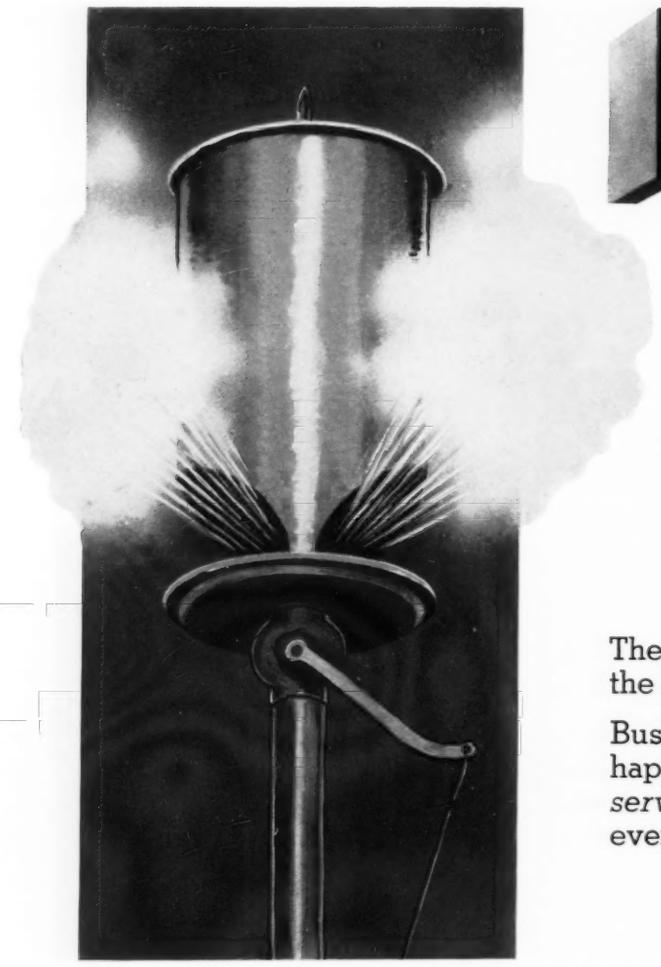

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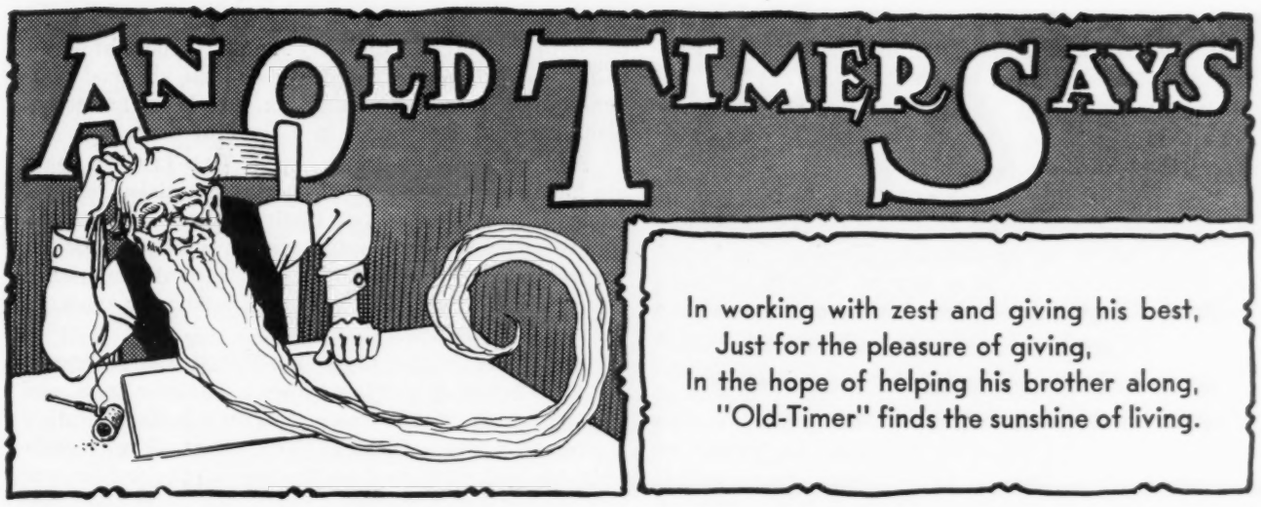

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Is Everybody Superstitious?

(Since this article is written in conversational style, it should be borne in mind that the paragraphs in regular type represent OLD-TIMER'S part in the conversation and those in *italics* represent JIM'S part.)

You know, JIM, everybody is superstitious—

Whoa there, OLD-TIMER! *That is covering too much territory. Anyway, you do not usually make a definite statement without proof to back it up, and I don't believe you can back up any such broad statement as that. To say that everybody—*

Just hold your horses a minute, JIM. You grabbed my statement before I had time to finish. I intended to go on to say that at least I don't believe I was ever associated with any person for a reasonable length of time without seeing some little thing about that person which indicated that he or she was just a little bit superstitious in some way.

Oh well, now that is different, and you know there are quite a few millions of people with whom you have not been associated nor even ever seen.

Yes, JIM, but during all these hundred or more years I've lived I've met and been associated with enough people to form a pretty fair cross-section of humanity in general, or I should say, to represent an average. And in making the remark I did not have in mind the uneducated class of people who, we usually take for granted, are superstitious, but it seems to be that there is an inborn inclination for all human beings to be superstitious, although the more intelligent classes usually scoff at such a suggestion and would become offended if you should even intimate to them that they are superstitious.

All during my business and social life I have noticed that oftentimes when planning to carry out some idea or when expecting to be offered a promotion or when changing from one position to another—when preparing to put a new system into effect which would affect a large number of operatives and in fact on most any problem which required concentrated thought for any length of time, that certain rather inexplainable ideas would crop into my mind that could not possibly have any bearing on the outcome of what I was planning, still there was that thought that if so-and-so should happen, it would ruin the deal.

Becoming rather self-conscious of this fact made me ask myself the direct question: Am I superstitious? Certainly not. Who ever heard of such a silly thing? I certainly have more common sense than to be superstitious. Ignorant people and the tribes of uncivilized savages are the only people who are superstitious. Then, by Heck, while I was assuring myself so positively that I did not have as much as a speck of superstition in my system, I was confronted with making one of the most important decisions of my business life. Anyway, I had dictated an important letter and made several changes and finally told my secretary to hold the letter until tomorrow and give me time to think it over before mailing it. She says, "Do you know what tomorrow is?" I looked at the calendar and, oh my Gosh, "tomorrow" was Friday, the 13th.

Now, JIM, inasmuch as you resented my statement that you are superstitious, will you give me an honest answer and tell me whether you would have waited until Friday, the 13th, to mail that letter or not? Remember, now, I have already told you it was one of the most important decisions of my business life—it would and did have a bearing on all my future business life. This was a matter that had been gradually coming to a head for three years. Oh, yes, I have dictated many important business letters knowing that the date was Friday, or even Friday, the 13th, but as I have explained, this particular decision was vitally important, and I had not realized that "tomorrow was Friday, the 13th," until the stenographer called my attention to it. Now I am asking you for an honest answer to my question.

Well, OLD-TIMER, *I'll tell you—*

Never mind, JIM, I see you are going to dodge and I'll dodge too, because if I told our readers that I held that letter until Friday, the 13th, many of them would not believe me and we would have a bushel of fan mail wanting to know whether the letter was suc-

cessful or not. Well, now, those people who would want to know the result of mailing the letter on Friday, the 13th—are they superstitious or not?

OLD-TIMER, *a few minutes ago you made the remark that something happened recently to bring this superstition business to your mind.*

Yes, JIM, it did, in fact something is popping up all the time to remind me that "Everybody Is Superstitious", but to be specific, last Monday, I dropped out to a country club in a city of 100,000 or more population, hoping I would find some other straggler without anything to do on that Monday and have a game of golf. The caddy master informed me that on Monday the ministers who were not members of the club were allowed to play without paying greens fees, and that if I cared to play with the preachers I would have no trouble in getting a game. That suited me fine, so I went out on the putting green to wait. Finally, I saw the caddy master approaching with two men, who turned out to be a couple of prominent D.D's. Well, after the usual first tee preliminaries—no, I am wrong, we did not have the usual first tee preliminaries, because the usual preliminaries consist of all players lying about their score and after giving all of the alibis they can think of, then making a 25-cent, 50-cent, or one dollar bet.

But here Dr. Doe says: "I usually shoot 90 to 95" and Dr. Noe spoke up with the statement, "I should have about 85". (Oh, my Gosh! I'll say OLD-TIMER is going to have a golf game and that 85 shooter looks like he is as old as OLD-TIMER. It developed that Dr. Noe was older than OLD-TIMER by three or four years).

As the editor usually calls me down for taking up space to describe places or events in detail, we will skip that golf game, except to say that it was most enjoyable—Dr. Noe and OLD-TIMER got to be quite good friends—so much so that OLD-TIMER took Dr. Noe home after the game and was invited in to meet the family.

In coming out of the club house with Dr. Noe on our way to my auto, I started to pass one of the large porch columns, and although Dr. Noe was almost past the same column on the opposite side, he stopped, turned around and passed the column on the same side as OLD-TIMER did.

Now here is a highly educated man—a religious student—a man so far advanced in his calling that he is a Doctor of Divinity, and I am leaving it up to you to answer the question for yourself, "Is he superstitious or not?" Do you do the same thing Dr. Noe did? Do you avoid passing on the opposite side of a post when you are walking with someone? Well, why do you do it? Still, if I ask you if you are superstitious you probably will be offended.

Of course such a thing as a black cat crossing the road is too absurd to ask you if you pay any attention to it or not, but do you? Anyway, here is something I saw in a southern city which has a very broad street leading out of town toward the country club. My son lived in this town at the time and one afternoon on our way to the club there was a car just in front of us driven by a lady and all at once she speeded up and although there were two street car tracks in the middle of the street, she swerved her car right out onto the tracks. Both my son and I thought something was wrong with the car or that she had suddenly gone crazy or something, until we noticed a black cat that she passed in a cloud of dust.

And no doubt the majority of OLD-TIMER'S readers have read newspaper or magazine articles relating in detail how some of our distinguished senators and congressmen in Washington visit a widely publicized fortune teller. I wonder if one of those distinguished law makers would walk under a ladder or open an umbrella in his house.

Not many moons since OLD-TIMER was sitting in an office building waiting to see a business man, and just across the street was a man on a ladder painting a sign at a movie theater. The side walk was probably 10 feet wide and as the top of the ladder was resting against a marquee projecting from the front of the building, that threw the bottom of the ladder to be within about two feet of the outside of the side walk. During the 30 minutes or more that OLD-TIMER sat there not just one person walked under that ladder. They would all walk over the narrow strip of about two feet between the bottom of the ladder and the edge of the sidewalk. Why? Do you walk under ladders?

Don't just read what OLD-TIMER is telling you about other people—he has accused you of being superstitious—in fact, he has accused everybody of having a tiny little spark of superstition in him—therefore, you should answer these questions to yourself as we go along. By the way, do you know yourself? OLD-TIMER'S answer to that is No, but we cannot go into that now; you might accuse OLD-TIMER of being suspicious; but whether he is or not, he just doesn't like for you to cross your fingers when he is trying to make one of these sure (?) two-foot putts, especially when the green is all square.

A daily paper which lies here before me as I write carries one of a series of advertisements by a large bank. The wording of this advertisement says that you do not have to go to a crystal gazer to find out about investments, but that you should come to that bank, etc. Are there still people who believe that a crystal gazer can tell them how to invest their money? If so, why doesn't the crystal gazer make a million? I don't know whether the man who goes to crystal gazers, fortune tellers, palmists, etc., ever asks himself this question, but I do know that there are a great many more people paying out their hard-earned dollars to fortune tellers, crystal-gazers, etc.

Riding along in my car the other day I heard a broadcast where the announcer was interviewing a weather man. It seems the man is a practical weather man as well as a scientific one. His name is Peabody. Maybe you heard the same broadcast. Anyway, the announcer was asking him about the many things people call the weather man about, and one of the items Mr. Peabody said was that many young people phone him about is to know if such-and-such a day is going to be a rainy day as they wish to set that day for their wedding provided it is not going to rain. In other words, it is bad luck to get married on a rainy day—and how many weddings have you ever attended

or heard of that were held on Friday, and I know there is no need to ask if you have ever attended a wedding on Friday, the 13th.

It is probably conservative to say that more than 50 per cent of the differences between the unions and management is caused by the superstitions of both sides, and any successful labor leader will tell you that if he can find some way, work some scheme, to arouse superstitions against the management the operatives will follow like sheep. Wonder why the overseers and superintendents could not profit by that fact.

Now, let's get down to brass tacks, fellows. OLD-TIMER knows the many things which have passed through your minds while you have been reading all this foolishness. He knows that these illustrations have brought to your minds many little superstitious things that have caused you to think the boss had it in for you or the spinner, the carder or the weaver did something that caused your superstitious mind to blame them for. You know, because he did so-and-so, that he was telling tales on you to the boss; you know that he is doing everything in his department to make the work run badly in your department; you know he is saying uncomplimentary things to your friends, behind your back.

Now look out, brother, when you are letting superstition, or jealousy, or just pure darn meanness affect your mind like this concerning your work, your association with the men, with whom you are supposed to co-operate, well, it looks like you may be riding for a fall. Remember that OLD-TIMER article pointing out that "Love Brings Love and Hate Brings Hate"? If you gave your desk-mate in school a part of your apple or candy, didn't he, when he had some, give you part of his? If some friend sent you a Christmas card last Christmas didn't you say to yourself: "I'll sure send him one next Christmas"? And if you do your brother overseer a good turn; if you show him that you are honest-to-goodness trying to co-operate with him, then, by heck, all the superstition and everything else will not keep him from co-operating with you.

Oh yes, I know you will say that a certain fellow is such a darn rascal he would not co-operate with anybody, but why not give OLD-TIMER'S idea a six months' trial? Pick out the man that you just know dislikes you and try doing him a good turn or two. Be honest in this; don't do it unless you can put your heart into it; do it because you really *want* to; do it because you are a gentleman and can get pleasure out of doing a good turn to your fellow man. Just try it out for six months on a few of what you may call "sour-pusses", and OLD-TIMER assures you that you will be happier than you have ever been in your life.

Domestic Rayon Stocks

Surplus stocks of rayon in the hands of domestic producers amounted to 7,500,000 pounds, or about one week's supply at the present rate of shipment, states the *Rayon Organon*, published by the Textile Economics Bureau, Inc., in its current review of the industry. At the close of October, stocks on hand totaled 9,400,000 pounds and on November 30, 1938, they totaled 40,000,000 pounds.

Rayon yarn shipments to domestic consumers totaled 32,900,000 pounds last month against 34,100,000 pounds in October and 21,700,000 pounds in November, 1938. Shipments for the eleven months to November 30 totaled 325,300,000 pounds, an increase of 31 per cent compared with shipments of 247,900,000 pounds in the corresponding period in 1938.

"November shipments represented essentially capacity production," states the *Organon*. "And with producers' yarn stocks at their present extremely low level, it is clear why November shipments could not be expected to maintain the higher monthly delivery rate of the June-October period."

◆

Wins Safety Award

Plant A of the Berkshire Fine Spinning Associates, Inc., Providence, R. I., recently was awarded a plaque for having achieved the best safety record of any cotton textile mill in New England. The plaque presentation was occasioned by the mill having operated 3,013,328 man-hours from September 1937 to June 1939 without a lost-time accident. The award was presented by Robert P. Ashley, vice-president, Liberty Mutual Insurance Company, to Henri F. Horn, superintendent of the plant, before a gathering of plant officials. In 1938 this plant also won the Massachusetts Safety Council's award for making the best record in a state-wide industrial safety contest.

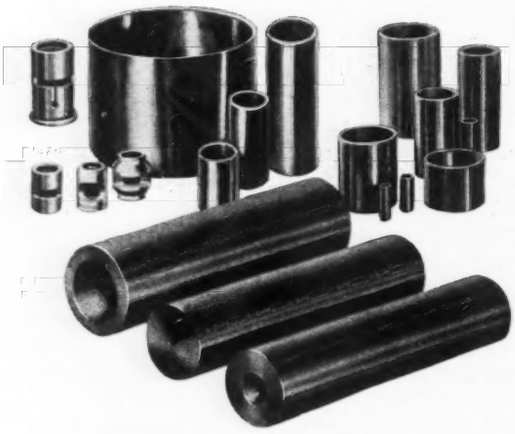
Improved Roll Covering

Gill Leather Company, Salem, Mass., manufacturers of roller leather, have announced their improved "Phantom Hand" roller covering, a feature of which that is emphasized by the manufacturers being automatic stoppage when the covering surface starts to wear through. The material, it is stated, is impervious to excessive humidity, resists flattening over the week-end, and has many other features.

Miss Hill Receives Award of Merit

Courtesy of Daily News Record

Miss Opal Hill, who was graduated in textile engineering last summer at Texas Technological College, is shown here displaying the National Association of Cotton Manufacturers annual award of merit to textile school graduates, which she received upon graduation. Miss Hill, believed to be the first woman to receive a full degree in textile engineering in this country, is now connected with Wellington, Sears Co., New York City. In the picture, left to right: Norman E. Horn, advertising manager, and Harry L. Bailey, president, of Wellington, Sears Co.; Miss Hill; Russell T. Fisher, president of the National Association, who made the award; and Charles A. Sweet, executive of Wellington, Sears Co. . . .



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HOW OTHER MEN MANAGE

Picker Speeds and Settings

EDITOR COTTON:

Having read the data to the question of "CONTRIBUTOR No. 6926", who inquires as to how he may secure cleaner stock and get a better breaking strength and who gives his present set-up, on page 105 of the August issue, it seems that there are several changes which might show improvement in cleaning and breaking strength. As briefly as possible, his set-up is as follows:

One-inch Middling cotton, 16-ounce picker lap of 48 yards length, requiring 6½ minutes to run. Opener room 650 r.p.m. Production per hour 1350 pounds. Two per cent waste opening and picking. Picker data, Buckley beater 1300 r.p.m. 2½-inch feed roll making 10 r.p.m. Fan speed 1400 r.p.m. Feed roll set to beater 3/16 inch, beats per inch 16. Two-blade intermediate beater 1,100 r.p.m. 2⅛-inch feed roll 24 r.p.m. Fan speed 1400 r.p.m., feed roll to beater 3/16 inch, beats per inch 14. Three blade Kirschner finisher (carding) beater 1000 r.p.m. Three inches feed roll 10 r.p.m. Fan 1500 r.p.m. feed roll to beater 3/16 inch. Beats per inch 32.

From these data the 16-ounce lap seems a little on the heavy side. 13.5 or 14.0 ounces per yard might give better cleaning on the pickers and possibly have a good effect on the carding. This could be off-set by the draft on the card and by running a 54 or 56 yard lap to give approximately the same number of pounds per lap.

The speed of 600 r.p.m. on the vertical opener can best be checked by seeing if there is excessive curling of the fibers when delivered by this machine. This seems about right for a staple length of one-inch.

A little more than two per cent waste on opening and picking might be advantageously removed. This is determined largely by conditions of the cotton being handled and the state of cleanliness required for the finished product. It might be well to remember that the more drastic the cleaning process the lower the breaking strength.

The Buckley beater speed of 1300 r.p.m. seems too high. This is especially true where the setting is only 3/16 inch on a 2½ inch feed roll. Since the effective setting of a picker feed roll decreases as the roll diameter decreases this is a fairly close setting even on one inch cotton. ¼ inch or even ⅜ inch might show an improvement. 1300 r.p.m. is a pretty high speed for this type of beater. As we understand, this beater removes the heavier waste and opens up the stock so that the lighter waste may be removed on subsequent processes.

It is frequently necessary to check the condition of Buckley bars from time to time to replace or reshape those bent or worn from use. Worn or rounded bars do not "pick" the stock across the grid bars positively enough, with the result the cotton is picked up and dropped by several bars in succession, rather than being carried across the bars in one motion. The latter will probably tend to give better cleaning. Bars which have been worn can be built up with hard metal by an electric welder then ground down to the proper angle.

For breaker beaters of approximately 20 inch diameter, 600 to 700 r.p.m. have proven satisfactory; for beaters of approximately 36 inch diameter speeds of 400 to 500 r.p.m give about the same effect.

On the middle section with two-blade beaters 1100 turns per minute with 10 beats per inch is about right. The 3/16 inch beater setting might be increased to ¼ inch and the fan speed slowed down from 1400 r.p.m. to 1000 or 1100 r.p.m. Watch the action of the stock on cylinder screens and the appearance of the laps when unrolled before a bright light to determine what effect fan speeds are having on the laps.

On the three blade Kirschner beater, 1000 r.p.m. is about right with 3/16 inch setting and 32 beats per inch. The fan speed of 1500 turns might be slowed down to 1000 or 1200 r.p.m. to allow the stock to form a better finisher lap on the screens.

These points are suggestions only and any changes should be made a little at a time allowing plenty of time to observe the effect of each change. They are also made with the assumption that the picker has been checked for sharpness of bar beaters, condition of evener, condition of evener pedal bearing, sensitivity of belt shipper, leather around screens, holes in screens, settings and cleanliness of grid bars, polish of calender rolls, and all parts where cotton slides or passes. Also bearings of beaters and feed rolls where settings must be maintained. It might be well to check limits of feed—whether stock runs full or nearly empty before feeder control moves or whether about the same amount is kept in hoppers at all times.

CONTRIBUTOR No. 6979

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

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Improving Rolls in the Card Room

THE FLAT strip roll is very useful on the card yet very troublesome when in a dilapidated condition. The wool or cotton cloth covering wears through to the wood, leaving the roll rough. The rough condition makes it hard to remove the waste when foll. Often when the tender removes one end from the card he allows it to drop too low and splits the wood roll. This ruins it and makes it impossible to keep the steel pin in the end. Fig. 1 represents the flat strip roll (Thompson roll) on the card after it has been improved.

The roll may be improved as illustrated. Place the roll in the lathe with or without the pins and cut both ends ¼ inch smaller in diameter to a length of 1½ inches. Cut the fiber collars and fit to the wood. Insert the pins after covering with cement and then force the fiber in place. The collar may be cemented if desired and driven on tight. It helps to retain the pin, prevents splitting, and increases the strength of the roll to the point it will break at other places first. The fiber in contact with the sharp wire of the flats does not wear off so fast as the wood and protects the cloth covering. (The fiber tubing can be bought in standard sizes.)

The covering may be regular mixed wool and cotton clearer cloth beginning and ending between the fiber collars. A better covering can be obtained by using knitted cotton tubing and place the ends under the fibre collars before driving on tight. Better results may be obtained by cementing the tubing to the roll full length and have the ends under the collars. It may be recovered by removing the collars. It is easier to remove the waste from cotton covered rolls.

Fig. 2 represents the card feed roll clearer. It is recalled that this clearer is a ⅝ inch or ¾ inch steel rod covered with cloth. The cloth is cemented to the roll and made fast on each end by nailing to a wooden plug inserted in the direction of its diameter. The nailed ends leaves the roll rough and prevents free turning.

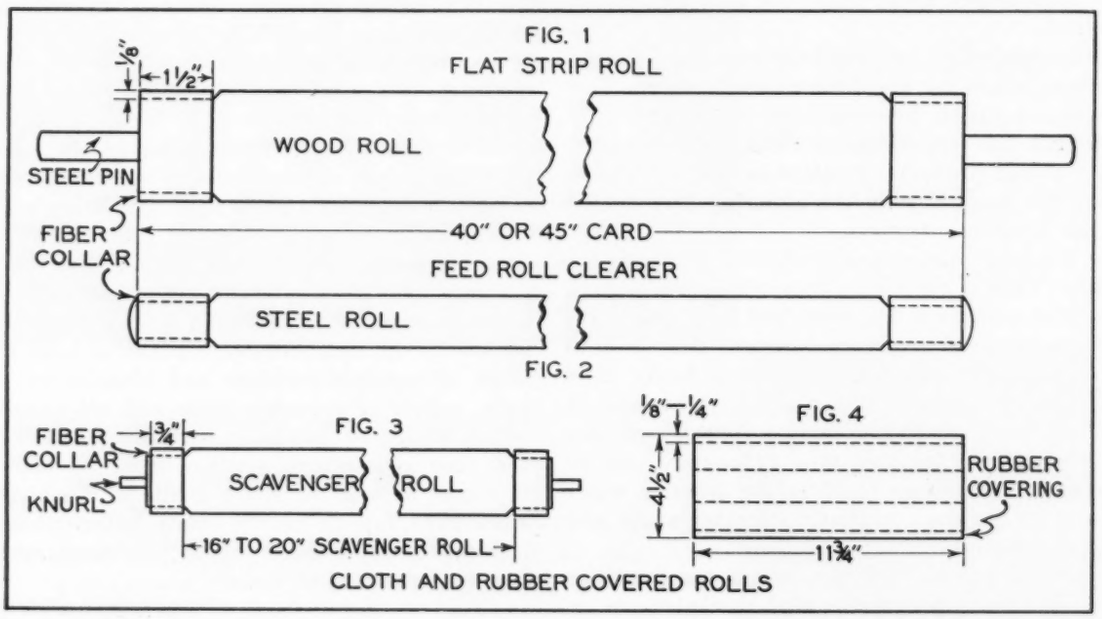
The improved roll is made by turning the ends as in Fig. 1 and cover in the same manner. Placing the ends of the knitted tubing under the fiber collars eliminates the nailing and rough ends to retard turning.

Fig. 3 illustrates the scavenger roll for the spinning frame or speeder (if used on the speeder). It is prepared and covered similar to the roll in Fig. 1. The knitted covering leaves the roll without a seam.

Fig. 4 illustrates the wooden pin as used on the sliver and ribbon lapper. It is made of hard wood, finished very smoothly, and then varnished. The pin is driven by friction of the contact of the pin and the metal drums. Traction between the two is poor. The poor traction causes the cotton to wrinkle at the beginning of each lap regardless of the carefulness of the tender and especially if the machine is equipped with safety guards. It is necessary for the tender to bring the lap to a point and wrap around the pin to start it. His aid in starting with the hand wheel is insufficient to prevent the wrinkled stock.

When the wrinkled lap runs out it is necessary to remove the last yard or more to prevent the lump from entering the piecing. This is the source of almost the greatest amount of reclaimable waste created in the preparation department. Laps weigh from 500 to 800 grains per yard. It is desired to eliminate the waste and the trouble of wrapping the lap around the pin.

The pin may be covered with crepe rubber to increase the traction by spiraling around it or much better to use a crepe rubber tube held firmly with cement. (If in doubt use a tire tube turned inside



out. The crepe rubber is much better.) After covering the pin with rubber it is necessary to break the lap at any point from the five inch calender roll to the pin. Insert the newly covered pin and lower the blocks without wrapping the stock. The rubber cover will pick up the end and wind tight at the beginning. This will give an increase in production.

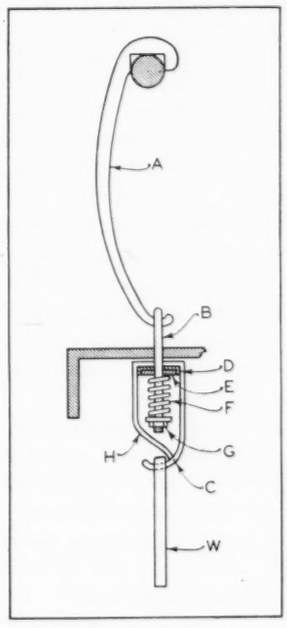
There is a slight difference with the ribbon lapper as the drums are lower than the delivery of the five inch calender rolls. It is necessary to have the end under the pin when the blocks are down for best results.

CONTRIBUTOR No. 6983

Reducing Impact in Leather Rolls

EDITOR COTTON:

When a common leather roll is run at high speed (say 400 r.p.m.) and jumps, the cause is due to impact that takes place in the saddle, hook and stirrup. Therefore, to find the cause we must deal with forces which produce in definite masses, definite changes of



momentum in excessively short periods of time.

In general we have no knowledge of the actual force exerted at any instant during the impact. However, I do know that impact is a pressure of short duration exerted between the weight and rolls. The effects of impact are sometimes an alteration of the distribution of actual energy between the two rolls, and always a loss of a portion of that energy, depending on the imperfection of the elasticity of the roll covering, in permanently altering their figures, in the form of hollow places or flutes.

Deduce the foregoing and you have the answer to the question "What is the difference between the figured and actual draft?" And for the foregoing reason it is impossible to attain the figured draft or twist.

However, we can increase the effectiveness of the draft by eliminating impact. Just metal springs will not do. Metal must be separated from metal. Referring to the accompanying sketch we see a method to reduce impact:

"A" is the saddle; *"B"* the stirrup; *"C"* the weight hook; *"D"* is a cup shaped rubber washer; *"E"* is a metal washer in contact with rubber washer *"D"* and spring *"F"*, *"G"* is a washer and nut threaded to the bottom end of the stirrup; *"W"* is the weight; and *"H"* is light bar stock and shaped in hook form to fit the eye of the weight.

This device is a home-made affair that can be made easily. It is for high speed front leather rolls. I have used it since 1907.

WASH (R. I.)

Some Comments on "Average Count"

EDITOR COTTON:

My attention has been called to the discussion regarding "average count" by "CONTRIBUTOR NO. 6778" and "CONTRIBUTOR NO. 6779" on page 95 of the September 1938 issue of COTTON.

The term "average count" usually means the equivalent or resultant count of a *yarn* when two or more yarns of unequal count are twisted together. Ordinarily they are passed through the same rolls of a twister and are of *unequal length*. When the twist is above normal or when one yarn is longer than the other, as in spiraled yarns, the take-up or contraction of the yarn is also a factor which has to be taken into account. Being of equal length and unequal counts the weights must necessarily be unequal; this is in accordance with the latter part of the article by "CONTRIBUTOR NO. 6778".

Considering the examples used by "CONTRIBUTOR NO. 6779" of one end of 20s and one end of 40s twisted together:

$20 \times 840 = 16{,}800$ yards per pound.

16,800 yards of 40s yarn would weigh 0.5 pounds, making a total of 1.5 pounds.

16,800 yards $\div$ 1.5 pounds $=$ 11,200 yards per pound.

$11{,}200 \div 840 = 13.33$s average count of the *yarn*.

This could be found as follows:

$$\frac{20 \times 40}{20 + 40} = \frac{800}{60} = 13.33\text{s average yarn}$$

The average of the two yarns is 26.67s. The ply yarn would probably be designated as 2/26.7s or 2/27s.

If one end of 10s yarn and one end of 20s yarn were twisted together the ply yarn would contain 5,600 yards per pound, equal to 6.67s.

$$\frac{10 \times 20}{10 + 20} = 6.67\text{s count, or as usually designated, average count.}$$

CONTRIBUTOR No. 6972

Reverse Twist Yarn Sticks to Cylinder

ONE MILL RUNS regular and reverse twisted yarn through one size box, splitting the reverse and regular yarn, and permitting the reverse twisted yarn to pass through a small box where it is tinted with a fugitive dye for identification purposes. This plant has had trouble with the tinted reverse twisted yarn sticking to the cylinders, and requested information as to how this may be prevented.

Two letters were received from mill men in answer to the editors' requests for assistance.

First Answer: We are slashing reverse twist and regular twist warps and using the fugitive dye in the reverse twist, in a manner similar to that used by the organization having difficulty with the yarn sticking to the cylinder. We do not recall having ever had any difficulty with the reverse twist yarn sticking on the slasher cylinder, but after discussing this problem with our weave room and slasher men, it is a general opinion of ours that there are two possibilities which might cause the dyed reverse twist yarn to stick to the cylinder.

The possibility is that the size rolls in the fugitive dye box might not be squeezing a sufficient quantity of colored size out of the yarn. This would leave an excessive amount of the colored size on the yarn, which would in turn tend to coat the cylinder. The reverse twist yarn, as handled in our mill, is first to reach the cylinder as it is underneath the regular twist yarn, which comes out of the regular size box.

The other possible source of trouble would be a lack of constant proper temperature in the fugitive dye size box which might permit the size temperature to fall too low at times. We believe that should this happen the size would not properly penetrate the yarn and would remain on the surface in a partially congealed form.

Second Answer: It is true that we run regular and reverse twist yarn in the same warp, but we separate the yarn first and then run each yarn through a separate size box and the reverse yarn is made to contact drying cylinder about three feet before the regular yarn contacts the cylinder; in this way we prevent the dyed yarn from staining the regular yarn.

We have never had any trouble with the yarn sticking to the cylinders and the only trouble we ever had was the reverse yarn, dyed blue, staining the regular white yarn.

Sticking to slasher cylinders is generally due to lack of fat content size and sometimes a slight addition of glycerine will stop it; however, I would not even suggest that glycerine be added, for this is a matter for each individual mill to work out, and should be governed by the make and contents of size.

It is possible that dyeing after sizing could dilute the sized yarn to such an extent that sticking would be probable.

Placing More Stock in Card and Drawing Cans

ON PAGE 69-72 of the May 1939 issue of COTTON, there appeared an article entitled "Nine Old Textile Men Discuss Picking and Card Room Problems", which was a compilation of answers that nine of the mill men of Georgia prepared for this magazine.

One of the topics dealt with putting more silver in 12x36-inch card and drawing cans, and one man answered as follows: "We are experimenting with setting the heads off center, so as to fill the space near the outside of the can, also the hole in the middle of the can. We get 16 pounds in card cans and 19 pounds in drawing cans."

This point was of particular interest to the superintendent of another mill, who wrote to the editors of COTTON as follows: "I am very much interested in how this mill is able to get 16 pounds of sliver in the card cans and 19 pounds in the drawing cans. I would appreciate hearing if they use a smaller bore trumpet than they were formerly using. Also, would like to find out what diameter they are using on the calender and coiler head trumpets and on their drawing frame trumpets. Also the grain sliver they are using. We are now getting 10½ pounds in the cans at the cards and 13 1/3 pounds at the drawing, which, as you can see, could be increased by about 50 per cent if we could do as well as the mill reportingon this subject."

In answer to this inquiry, which was forwarded to the proper mill by COTTON, the mill placing more stock in the card and drawing cans responded: "We did change the trumpets on our cards and drawing and the sizes we are using are as follows:

"On our card trumpets the bore is 135/1000-inch and on the drawing trumpets the bore is 125/1000-inch. Our card sliver is 51½ grains on both cards and drawing.

"In addition to changing the card trumpets, we set the drawing cans off center so as to fill up the empty space on the outside of the can, as well as the hole in the middle of the sliver, and on the cards we added some weight to the calender rolls.

"I will admit that the results we obtained did sound rather exaggerated and I think we are all sometimes surprised at what we can really do when we study our problems and put forth real concentrated effort."

If other mills have had experience with placing more sliver in their card and drawing cans, the editors of COTTON will be glad to know of their methods to pass along to mill men interested in this subject.

Standard Pressed Steel Build New Plant

The Standard Pressed Steel Company, Jenkintown, Pa., makers of shop equipment and socket screw products, is building a 140x80 foot addition to the main plant. It will be of steel, brick, and glass construction, used to house steel storage, etc.

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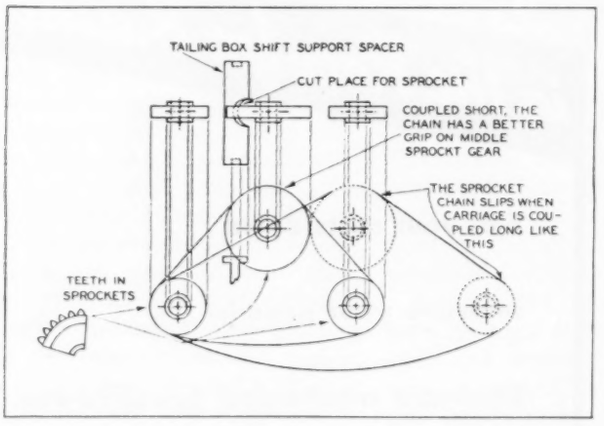
Spooler Room Talk

"MR. SIMPSON, start talking," I said to John, after exchanging a hearty hello with him. "Why are you calling me Mister," he asked. "You know I don't like such a title hung onto my name. And another thing," he added, "I'm not any kin to that woman that pulled the King off his throne. Shucks, I do well to get this yarn off these bobbins. Pulling kings off their thrones is a mite too highfulootin' for my kind of Simpsons."

"Who said anything about pulling kings off their thrones?" I said. "I want to know how you get corners off supply bills, as you call it."

"Now right here is a good example for you," he said, pulling the middle guard off the tailing end of


TAILING BOX SHIFT SUPPORT SPACER
CUT PLACE FOR SPROCKET
COUPLED SHORT, THE CHAIN HAS A BETTER GRIP ON MIDDLE SPROCKT GEAR
THE SPROCKET CHAIN SLIPS WHEN CARRIAGE IS COUPLED LONG LIKE THIS
TEETH IN SPROCKETS

the spooler. "Do you see that sprocket chain there?" he asked.

"Yes," I said. "What about it?"

"I have found that these sprocket chains will last about three times as long and the sprocket gears will last indefinitely if the chains are run close coupled."

"What do you mean by saying 'close coupled'?" I asked him.

"I mean that you must get the carriage coupled up close," he said. "You see," he continued, "there are three shafts; one is stationary, and the other two are movable. The stationary shaft has the elevator driven sprocket fastened on it and also the elevator belt pulleys. The movable shafts are fastened onto the take up carriage . . . "

"I see all of that," I said. "Go ahead and tell me why you coupled the outfit short and close up."

"Don't butt in on me like that," he said, "you get me all mixed up."

"I notice you have a piece cut out there in front of the middle sprocket," I said. "What's that for?"

"That's to allow the sprocket room to turn after it is set up close," he said. "You see, cutting away a portion of this piece right in front of the sprocket will allow the carriage to slip forward about an inch farther.

"The take up carriage is used to take the slack out of the conveyor belts. Now you know these belts reach from one end of the spooler to the other end. And these belts being so long they naturally develop a lot of slack. And as time goes on you keep running the carriage out farther and farther, and as a consequence the sprocket chain gets longer and longer for you must add a link now and then so that it will reach.

"That is exactly what I did for years and years. It never crossed my mind that the sprocket chain being too long was what caused it to slip on the middle sprocket gear. But one chain after another wore out, and about every time a chain wore out the middle sprocket gear would be in such bad shape it would have to be replaced by a new one. I ordered so many of these chains I bet that fellow in Greenville, that we ordered these parts from, thought we were using them to tie around cloth bales."

"What causes the sprocket chain to wear?" I asked.

"Most of the wear comes from what I just described—the carriage being set too far out from the stationary shaft will not allow the middle sprocket, which does the pulling, to get a good grip on the chain, thus causing it to slip. (See illustration.) The next main thing that causes wear on the chain is letting the bearings get clogged up with waste, also the bearings, which are oilless, have a tendency to gum up in the course of six or eight weeks."

"Do you clean these bearings regular?" I asked.

"I try to get to them every five or six weeks," he said.

"If you should keep these bearings clean and keep the carriage set up close how long do you think the chain and sprockets would wear?" I asked him.

"There is no reason why they shouldn't last several years," he said.

"What steps are necessary to set a carriage up close like you have this one?" I inquired.

"First you take this piece off here in front of the middle sprocket gear and grind off a space about two inches wide and about an inch deep. (The catalog name of this piece is Tailings Box Shelf Support Spacer-KKS 430). Then you slip the carriage in as far as it will go, being sure to run the two sections of the carriage as close together as possible. Then cut a piece out of the conveyor belts long enough to take the slack out of them; tighten them up, and you are rid of a lot of trouble."

"That's all very good," I said, "but I can't understand why you didn't think of it sooner."

"I reckon I was just working and not doing any thinking along with it," he said. "But I guess that's the trouble with most of us—we work and work and never try to think of what we are doing.

"I was down at the supply room the other morning and there were so many fixers wanting new parts they had to stand in line. Each fixer had an order for a new part and he had the old part with him which he threw in the junk box when his order was filled. Several of them were talking about a bonus. I thought to myself 'Men, you've got the bonus in your hands, but it's dead, and you are burying it in the junk box'."

"Isn't it a good idea to bring all the old parts to the supply room when you get new pieces for replacement?" I asked.

"I think so," he said, "because it concentrates

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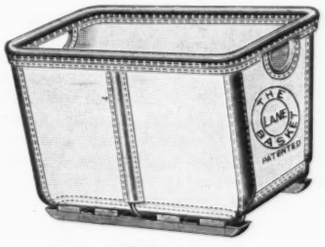

FIG. 20

Friendly Greetings
and
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waste in a place where everybody can see it and thus become conscious of it."

"Do you think the fixers and section men need to become more conscious of the waste of materials that is going on around them?" I asked.

"I think that all the workers ought to become alive to this subject," he said. "The overseers are waging a real fight against waste. But they aren't getting the right co-operation from us smaller fellows. We are not lending enough thought to causes and effects. When a piece wears out or breaks we don't stop and wonder WHY that piece wore out or broke."

John preached on a while longer, and then he turned and started talking about filling winders, but I told him I had to go; that we would talk about them the next time I came through.

Spinning Room Practice

(Continued from page 58)

changed from one yarn number to another, or from frames that have been overhauled and any new gears installed. This would prevent errors in gears causing more than one doff of the wrong yarn.

Problems in spinning room management have been discussed more or less generally throughout this series. One feature that has not been mentioned is *production control.* Unless a mill is on some kind of staple fabric, or even on goods that require only two or three numbers, some kind of system has to be devised that will guarantee the right yarn being made at the time when it is needed. If the mill has a production manager his duties will include working with the overseer of spinning in this respect. In smaller mills possibly the assistant superintendent would look after production.

In the case of filling yarns, possibly some one in the weave room would check the looms at stated intervals and order the necessary filling from the spinning room. If several kinds of filling are being run care should be exercised by the person ordering this yarn not to overstock, as this ties up quills, uses frames for production that is not needed and often ties up yarn in a form that cannot be used until another similar order is received.

The details of a production control system would have to be worked out at each individual mill, to suit local conditions, but would include: a consolidated report of current deliveries, broken down into the amounts of yarn needed to make these deliveries; a report of any yarns on hand; a knowledge of the productive capacity of the spinning room. From these facts the spinning frames can then be put on the yarns needed to fill these current orders.

Other management problems include, the training of help, assignment of work loads, questions of discipline, control of waste, labor cost, supplies, efficiency, cleanliness, maintenance of equipment, control of bad work, safety and so on. In the planning as to just how these things can best be handled the overseer is wise who takes his assistants into his full confidence. Even the section men should be fully informed as to the overseer's program for the last analysis the overseer must depend largely upon his section men for the detailed execution of most of his plans.

The Varnishing of Jacquard Harness

A RECENT inquiry to COTTON had reference to Jacquard harness, it was, "Which is better for all weather conditions, to varnish Jacquard harness all over, or to varnish them just where the harness goes through the comber board?"

This question was passed along to a mill man having much Jacquard experience, and his reply is as follows:

I could answer this question by simply saying, "just where it goes through the comber board". But I do not feel that such an answer will be altogether satisfactory.

Mention of weather leads me to infer the question may have been prompted by trouble arising from humid conditions. Under certain humid conditions, some Jacquard harness will contract until it becomes too high above the shuttle race.

In the Irish textile trade, where high humid conditions prevail, the practice is to use a hard twist and highly polished all linen cord, and to varnish this where it goes through the comber board and for about 6 inches above. Also, to varnish it where it passes through the glass rods and for 6 inches below.

Under highly humid conditions, and varnished in this manner, it was a rare occurrence to have a harness affected by dampness. Harness have been varnished all over, but the results have not been beneficial.

If trouble is experienced with the Jacquard harness, it may lie with the neck cords, as these *must* be well stretched and rubbed with bee's wax in order to secure satisfactory results.

As I See It

Have you noticed, as I have, that when a man is wrong and won't admit it, he usually gets angry?

It seems to be human to try to cover up one's own mistakes and wrongdoing by a show of great indignation if someone catches us.

Much embarrassment can be avoided by frankly admitting, rather than defending, mistakes.

We feel like helping the fellow who honestly owns up to a mistake, but we like to "make a monkey" out of the person who stubbornly refuses to admit a mistake and gets mad at the suggestion that he has erred.—*Glenn Gardiner in "Management Information".*

Whose Fault?

For a couple of days the man working at the head of the conveyor, near the motor which drove the conveyor, had noticed that the motor was running hot. But he shrugged his shoulders and said to himself, "What of it? It's not my job to worry about motors!"

Then the motor burned out and every one in the department had to go home for the rest of the day. Thirty-two people lost wages averaging $2.00. Sixty-four dollars less was earned because this man didn't report the hot motor. — *"Management Information", Elliott Service Co., Inc.*

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The impressive 17-story building faces Miami's famous tropic Bayfront Park, with Biscayne Bay and the ocean beyond. Its location is conveniently adjacent to the shopping and theatre district.

No modern convenience is lacking—private baths and showers, steam heat for rarely cool days, soft water plant.

There are two floors of spacious public rooms, not counting the Biscayne Dining Room, Miami's finest, atop the Hotel.

All routine services plus many seldom found in any hotel are provided at the Columbus.

New illustrated booklet gives full details.

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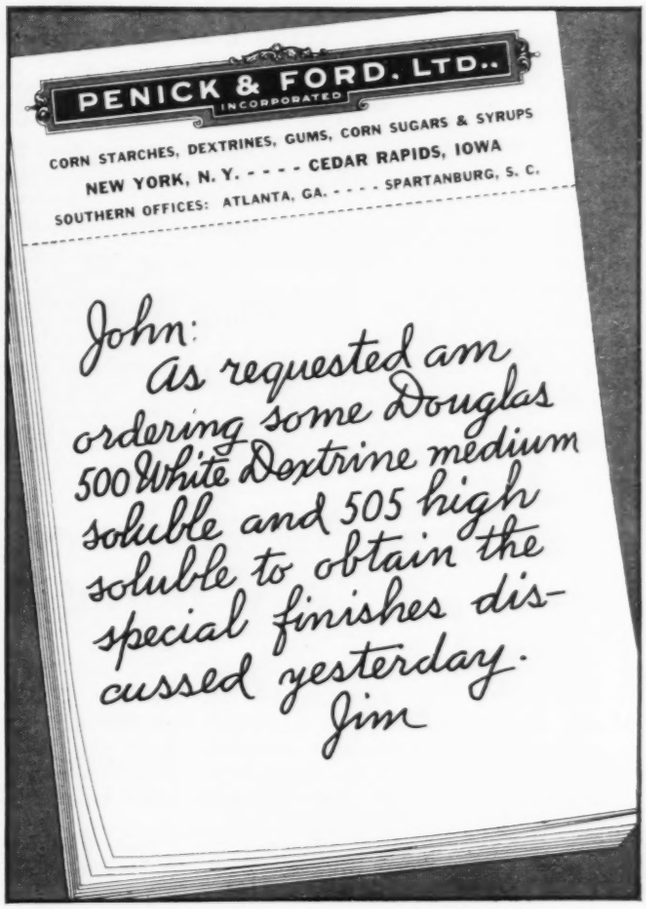
MIAMI · FLORIDA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John:
As requested am ordering some Douglas 500 White Dextrine medium soluble and 505 high soluble to obtain the special finishes discussed yesterday.
Jim

RAYON IDENTIFICATION *with* **TINTINOL**

Certified Fugitive Dyes for all Synthetic Fibres and Admixtures

TINTINOL *is Ready for Use in Any Color*

TINTINOL involves the control of three essential factors in Rayon Manufacturing by one simple application .. *Moisture, Lubrication, Tinting.* ★ It imparts tenacity similar to good running cotton, produces a firm web, reduces the crunch, reduces static and split laps. It is the most convenient and economical tinting process known. *No extra handling* . . . no drying . . . no heating . . . no harsh stock or curled fibres. ★ TINTINOL is shipped in light steel drums which serve for supply reservoir. You can have *any* color by the turn of a valve. ★ Base Oil (SS) concentrate is also available for conditioning white Rayon stocks where tinting is not necessary.

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON

17 BATTERY PLACE NEW YORK

Southern Sales Manager: H. L. Siever, Charlotte, N. C.
Representatives: R. C. Young, Charlotte, N. C.
W. B. Uhler, Spartanburg, S. C. John Ferguson, La Grange, Ga.
New England Representatives:
A. M. Knight, West Yarmouth, Mass. • F. L. Ekstrand, Stafford Springs, Conn.

Textile Publications

Textile Machine Works, Reading, Pa. Profusely illustrated brochure pointing out the salient features of the new Reading high-production full-fashioned knitting machine.

Rhode Island Warp Stop Equipment Company, Pawtucket, R. I. Illustrated literature pertaining to the use of K-A electric warp stop on modern looms, and how they make better cloth at less cost.

Stephens-Adamson Manufacturing Company, Aurora, Ill. Interesting issue (Vol. 184) of "The Labor Saver" showing progress in material handling.

Walworth Company, 60 East 42nd St., New York City. Bulletin on Ni-Resist pipe, a corrosion and heat resistant cast iron pipe for services as waste lines for the laboratory, caustic lines, sulphite pulp mill blow pit waste lines, etc.

E. I. Du Pont de Nemours & Company, Inc., Wilmington, Del. Sample folder and information on properties and dyeing procedure for using Ponsol Blue GD Double Paste and Powder, and Ponsol Blue GDS Double, a vat color.

Fletcher Works, Glenwood Ave., and Second St., Philadelphia, Pa. Literature descriptive of the new high speed whirlwind extractor.

Hygrade Lamp Division, Hygrade Sylvania Corporation, Salem, Mass. Literature descriptive of new fluorescent lamps, the Miralume HF-100 for industrial lighting, and the Miralume HF-200 for commercial installations.

S. C. Lawlor Company, 122-4 North Aberdeen St., Chicago, Ill. Catalog on the company's all steel floor maintenance equipment.

Crane Company, 836 S. Michigan Ave., Chicago, Ill. Illustrated catalog on the company's corrosion-resistant valves and fittings.

Riggs and Lombard, Inc., Lowell, Mass. A broadside descriptive of the Fleet Line and in which is given a review of progress.

Pabst Sales Company, 221 North LaSalle St., Chicago, Ill. "Notes on Exsize", a helpful booklet explaining the use of Exsize in desizing fabrics. Also a general review of general sizing and finishing of fabrics, with a flow chart showing the various procedures used in cotton and rayon finishing plants.

What the Southern Mills Are Doing

Tifton (Ga.) Cotton Mills have built a 26x80-foot addition which is being used as a warehouse and a warper room. This plant has also installed new cards, H & B twister spindles, 4 Abbott winders, and new drawing frames.

Caldwell Cotton Mill Company, Hudson, N. C., has installed 3,000 new spindles equipped with long draft. Plans are to change over 6,000 spindles to long draft in the near future. Also, new interdraft slubbers have been installed.

Gregg Dyeing Company, Graniteville, S. C., is constructing a building to house apron conveyor equipment of the new three-story extension. Contract has been awarded to Daniel Construction Company, Anderson, S. C., by J. E. Sirrine & Company, Greenville, S. C.

Improvements are being made at the Nelson Cotton Mill Company, Whitnel, N. C., which include the installation of Whitin twister frames and new long draft spinning frames. Also slubbers, roving frames, and single-process picking are being installed.

Officials of the Wiscassett Mills Albemarle, N. C., have announced the final step in a program of modernization which was begun in 1933. New machinery will be installed in Plant No. 4, and a large warehouse will be erected.

Lanett Bleachery & Dye Works, Lanett, Ala., will install two automatic cloth lifts. The lifts will operate from the first to the third floor of the Lanett works. J. E. Sirrine & Company, Greenville, S. C., are the consulting and designing engineers.

The Rex and the Hanover Mills of Gastonia, N. C., are now under one controlling company, the Rex-Hanover Mills, Inc., of which A. G. Myers is president. Mr. Myers formerly was president of both mills.

The Dallas Manufacturing Company, Huntsville, Ala., has announced to its employees a plan for them to buy on easy terms the homes they now live in.

It has been announced that the Esther Mill, East Shelby, N. C., is formulating a plan whereby the mill employees may own their homes, which now are property of the mill.

According to reports, the Inman (S.C.) Cotton Mills will construct a new cloth room. This plant is now manufacturing fancy goods.

A charter has been granted Perfection Mills, Inc., Weldon, N. C., to operate a textile mill. Authorized capital stock is $100,000.

According to reports, the Woodstock Spinning Corporation, Anniston, Ala., will double its present capacity in the near future.

It is understood that the Morowebb Cotton Mills are being remodeled and that the company has started selling the mill houses.

Abbeville (S.C.) Cotton Mill has recently installed a new 7-cylinder rayon slasher, manufactured by the Cocker Machine and Foundry Company.

Minnewawa Manufacturing Company, Knoxville, Tenn., is a new concern which will manufacture woven labels.

Graniteville (S.C.) Manufacturing Company is constructing an addition costing $100,000.

Callaway Mills, LaGrange, Ga., will add a one-story addition to the bleachery of the Elm City Plant.

Manetta Mills, Lando, S. C., are installing 50 new Crompton and Knowles blanket looms.

New spinning frames and cards have been placed in the Union Mills, Maiden, N. C.

Henry River (N. C.) Mills are constructing a 31x151-foot addition.

◆

Jacobs Manufactures in Canada

E. H. Jacobs Manufacturing Company, Danielson, Conn., has begun the production of the company's complete line of reinforced canvas lug straps, reinforced hairy leather check straps and other products in the Montreal, Canada, plant of J. C. McLaren Belting Company.

◆

Minot, Hooper & Co. Is 100 Years Old

Established in 1840, by George R. Minot and National Hooper, the dry goods commission firm of Minot, Hooper & Co., 40 Worth Street, New York City, this year celebrates its 100th birthday, an unusual record even in an industry noted for its old-timers.

Messrs. Minot and Hooper started with offices at 32 India Wharf, Boston. For several years, they engaged in East India trade, and in 1844 shipped the first American cotton cloth to Smyrna; but in 1857, they abandoned this line and became selling agents for several important New England mills.

In 1866, when Stephen W. Marston of Boston was taken as a partner, the firm became Minot, Hooper & Co., and has remained so to the present, in spite of many changes in personnel.

During the past 100 years, Minot, Hooper & Co. have sold, at different times, the products of the following mills: Great Falls Mfg. Co., Somersworth, N. J.; Dwight Mfg. Co., Chicopee, Mass., and Alabama City, Ala.; Lyman Mills, Holyoke, Mass.; Manchester Mills, Manchester, N. H.; Chicopee Mfg. Co., Chicopee Falls, Mass.; Harmony Mills, Cohoes, N. Y.; John P. King Mfg. Co., Augusta, Ga.; Jennings Silk Co., Holyoke, Mass.; and Merrimack Mfg. Co.,Lowell, Mass., and Huntsville, Ala.

Because of changing conditions, some of these mills are no longer in existence, and one of them is selling its product direct.

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Here is presented an important service used every month by hundreds of COTTON readers. The listings explain themselves The Manuals, Reference Books and Catalogs, containing information of unusual value in mill construction and operation, will be sent you without obligation. Read through the list carefully. Then simply fill in on the coupon the number of those which interest you, and mail it to COTTON.

This service is for men engaged in textile manufacturing only. Requests received from those not in the industry cannot be handled.

Advertisers in this Issue Offer You . . . . . .

213. Saco-Lowell Cotton Machinery—Twisting—a 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

214. Saco-Lowell Cotton Machinery—Spinning—the second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

217. Diamond Fibre Hollow Ware—32 page booklet and catalog attractively illustrated, showing various types of boxes, trucks, cans, barrels, baskets and trays of Diamond Fibre Hollow Ware. Of interest to every mill man in solving material handling problems. Free on request. Continental-Diamond Fibre Co., Dept. C, Wilmington, Delaware.

218. Butterworth Electric Guiders—6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider and is unexcelled for fast, accurate guiding. H. W. Butterworth & Sons Co., Philadelphia, Pa.

223. Alloyed Iron in Southern Industrial Fields—16 page illustrated catalog dealing with the properties available in modern cast irons. International Nickel Co., 67 Wall St., New York, N. Y.

224. "Tank Talk"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. R. D. Cole Manufacturing Company, Newnan, Georgia.

233. Catalog No. 22—an attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. Meese, Inc., Madison, Ind.

234. They Stay Brighter Longer—This interesting illustrated booklet containing facts about Mazda lamps will be sent you free on request General Electric Company, Dept. 166, Nela Park, Cleveland, Ohio.

238. Glorified Light—A 32-page book illustrative of the vital part proper painting plays in scientific lighting and in the reduction of maintenance and production costs. Pittsburgh Plate Glass Co., Pittsburgh, Pa.

240. The New Proctor Automatic Yarn Dryer—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector. Proctor & Schwartz, Inc., Philadelphia, Pa.

253. Brown Air-O-Line Controllers — This booklet will prove invaluable to the men in charge of dyeing, finishing and slashing, as well as the textile executive. 32 illustrated pages describing the various Brown Controllers. The Brown Instrument Co., Philadelphia, Pa.

258. Automatic Overhead Cleaner for Spinning, Winding, Warping and Twisting—24 page booklet showing the new American MonoRail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner incorporates a new scientifically designed blower producing a whirling column of air directed and controlled so that it prevents accumulation of fly with no harm to roving. The American MonoRail Company, Cleveland, Ohio.

259. Cotton Conditioning with Texspray Compound — 18-page booklet describing the Texspray method of cotton conditioning. It has been proven that this method will save money, increase production, increase flexibility of fiber, eliminate static and reduce fly and dust. The Texas Company, New York, N. Y.

260. Lubrication—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the function of spindle oils. The Texas Company, New York, N. Y.

261. The Brown Moist-O-Graph—16 page booklet describing the Brown Moist-O-Graph which measures, records and controls the moisture content of cotton warp yarns. The Brown Instrument Company, Philadelphia, Pa.

263. Gastonia Brushes—New catalog and price list showing the complete line of brushes for the textile mill. Gastonia Brush Co., Gastonia, N C.

269. Stainless Steel Equipment for the Dyeing and Textile Industry—Attractive four-page folder describing the Blickman line of dyeing equipment. S. Blickman, Inc., Weehawken, N. J.

271. The New American Adjustable Diameter Wedgebelt Pulleys—illustrated leaflet describing the American adjustable diameter sheaves designed to produce the best performance in all types of V-belt driven textile machinery. American Pulley Co., Philadelphia, Pa.

272. Where to Buy Monel Metal Textile Equipment—Attractive booklet which lists the names and addresses of experienced fabricators of Monel Metal equipment for the textile mill. The International Nickel Company, Inc., 67 Wall St., New York, N. Y.

284. Morton Nickel Iron Quick Opening Handle Gate Valve—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Manufactured in nickel, stainless steel and stainless steel trim. Morton Machine Works, Columbus, Georgia.

286. Triton W-30—Study of wetting agents and their activity with recommendations for textile processing. Rohm & Haas Co., Philadelphia, Pa.

287. New American Pulley Motor Base Catalog—an attractive new illustrated catalog describing in detail construction and application of new tension control motor base. Includes data comparing performance of drives with and without tension control motor base and applications are shown for both flat and V-belt drives. American Pulley Co., Philadelphia, Pa.

289. Caustic Soda Bulletin—a data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas. Pennsylvania Salt Mfg. Co., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

290. Hyatt Roller Bearings on Textile Machinery of All Kinds—34 page booklet which describes and illustrates how Hyatt bearings are being applied to textile machinery. Hyatt Bearings Division, Newark, New Jersey.

295. Fence Facts—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence. Page Fence Association, Bridgeport, Conn.

296. Full-Fashioned Hosiery Manufacture — Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery. Gulf Oil Corporation, Pittsburgh, Pa.

297. Lunkenheimer List Price Schedule R-I—new 44 page catalog covering the entire line of valves, boiler mountings and lubricating devices manufactured by the Lunkenheimer Company. The Lunkenheimer Company, Cincinnati, Ohio.

299 The New International Time Recorder—Information on the new automatic time recorder which gives complete wage and hour records. International Business Machines Corp., New York, N. Y.

301. Norma-Hoffmann Bearings Catalog — Norma-Hoffmann Bearings Corp., Stamford, Conn.

305. Tannate Belting — leaflet describing Rhoads Tannate leather belts and their uses and advantages in textile mill operation. J. E. Rhoads & Sons, Philadelphia, Pa.

307. Lane Canvas Baskets—16 page illustrated booklet describing the Lane line of canvas baskets for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

308. Finnell Scrubbers—illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines. Finnell System, Inc., Elkhart, Ind.

311. The Romance of Prairie Gold—attractive illustrated book which tells the story of corn and the uses of corn products in industry. Corn Products Sales Co., New York, N. Y.

312. Cork—The Modern Roll Covering—attractive booklet outlining the uses and advantages of cork for textile roll covering. Armstrong Cork Products Co., Industrial Division, Textile Products Section, Lancaster, Pa.

314. Winding Production Chart—this useful production chart can be used for any style of winder. Also included are instructions for figuring yarn takeup speeds. Universal Winding Co., Providence, Rhode Island.

315. How Handling Problems Have Been Solved—a 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes. American MonoRail Company, 13106 Athens Ave., Cleveland, Ohio.

317. Circular Knitting Machines—a fifty-two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex. Sent free on request to Fidelity Machine Company, 3908 Frankford Ave., Philadelphia, Pa.

318. It's the Film—attractive folder describing and giving specifications for Lubriplate, the lubricant possessing features not found in conventional lubricants. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

319. Lubriplate—the modern textile machinery lubricant—attractive illustrated folder giving recommendations for textile machinery lubrication. Lubriplate is the new lubricant which forms a film on shafts, bearings, gear teeth, etc., which prevents wear, corrosion and contamination due to products of wear. Lubriplate Division, Fiske Bros. Refining Company, Newark, N. J.

320. The Control of Friction—four-page folder which shows why Lubriplate controls friction on textile machinery. Lubriplate Division, Fiske Bros. Refining Co., Newark, N. J.

321. Wooden Tanks for Many Purposes—attractive catalog containing much helpful data relative to general design and construction of wooden tanks for textile use. Also contains an interesting tabulation of experiments with different woods available for tank purposes. Hauser-Stander Tank Co., Cincinnati, Ohio.

322. The Application of Soaps and Soap Products to Textile Processing—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. Colgate-Palmolive-Peet Company, 105 Hudson St., Jersey City, N. J.

323. Textile Processing with Artic Syntex A and T—50-page illustrated booklet describing the properties of these new materials and giving tentative or suggested formulas for a number of applications in textile processing. Colgate-Palmolive-Peet Co., Jersey City, New Jersey.

327. Sanforizing Machinery—illustrated booklet describing the sanforizing machinery offered by the Textile Finishing Machinery Co., Providence, R. I. This bulletin is available only to finishing plants or executives thereof.

328. SKF Ball and Roller Bearing Transmission Appliances—84 pages, 100 illustrations, descriptions and dimensions of universal, unit, split and roller bearing pillow blocks, ball bearing drop and post hangers, take-up boxes. Suggestions and dimensional and load data for bearings also given. SKF Industries, Inc., Philadelphia, Pa.

330. Tools for the Textile Trade—a twelve-page booklet illustrating and describing specially selected tools for all textile mill departments—Loom Fixers, Spinning Room Fixers, etc. Snap-on Tools Corporation, Kenosha, Wisc.

331. Unbrako Self-Locking Hollow Set Screw—Bulletin Form 532 includes illustration sand descriptive matter of this latest improvement in socket and screws. This bulletin also features the complete line of "Unbrako" Socket Screws. Standard Pressed Steel Co., Jenkintown, Pa.

332. Hard Maple Flooring—an 8½ x 11-inch folder featuring a close-up of Northern Hard Maple Flooring and specimen pieces to show grades, prepared for the convenience of architects, builders and others when considering flooring grade requirements. Maple Flooring Mfrs. Assn., 332 South Michigan Ave., Chicago, Ill.

333. Fafnir Ball Bearings for the Textile Industry—Outlining the applications and advantages of ball bearings on textile machinery. Fafnir Bearing Co., New Britain, Conn.

334. Precision Winding for Silk and Rayon Yarns—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. Universal Winding Co., P. O. Box 1605, Providence, R. I.

335. Casters and Wheels—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this. Darnell Corp., Ltd., P. O. Box 4027-N, Station B, Long Beach, Calif.

337. Sizing and Finishing—A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing. Stein, Hall & Co., Inc., New York City.

338. Thickening Materials for Textile Printing—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine. Stein, Hall & Co., Inc., New York City.

339. Diehl Textile Motors—a 12-page booklet illustrating various types of installations on textile machinery and equipment and describing the different types of Diehl Motors, as well as Diehl Grinders and Fans. Address Textile Dept., P. N. Thorpe & Co., 267 5th Ave., New York City.

340. Notes on Cotton Warp Sizing—a 45-page handbook giving valuable data on the purposes and properties of various sizing products, their uses and preparation, with much information on the operation of slashing equipment. Will help solve many sizing problems. Address The Hart Products Corp., 1440 Broadway, New York City.

CONTINUED ON PAGE 98

HELPFUL BOOKLETS FREE...

Continued from Page 97

343. SKF Better Spinning and Twisting—16-page illustrated catalog containing technical information relating to construction and performance of SKF roller bearing spindles, tension pulleys, guide and idler pulleys and miscellaneous pulley and bearing applications. Distributed by all leading textile machinery manufacturers and SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

346. Dependable Finishing for Modern Elastic Top Hosiery—describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery. Union Special Machine Company, 400 North Franklin St., Chicago, Ill.

347. Rhoplex Resins—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles. Rohm & Haas Co., Inc., Philadelphia, Pa.

348. Johnson Ledaloyl Bearing Bronze—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricating bronze for textile bearings and bushings. Johnson Bronze Company, New Castle, Pa.

349. Preview—12 page illustrated booklet describing the Best Universal Locking System which features the interchangeable core and offers a solution to locking problems. Best Universal Lock Co., Indianapolis, Ind.

350. Theoretical and Applied Silk-Soaking—Attractive 28-page booklet outlining methods of silk-soaking and outlining investigations on the soaking, backwinding and degumming of silk. Hart Products Corp., New York City.

351. Wetsit—Leaflet describing Wetsit, a synthetic aromatic compound with excellent surface tension reducing properties; gives rapid wetting out and thorough penetration; available in three strengths. Jacques Wolf & Co., Passaic, N. J.

352. Lupomin—Leaflet describing Lupomin, a new cation active softening agent for all textiles but especially acetates and rayon crepes; odorless, permanent and easily applied; imparts soft, full feel. Jacques Wolf & Co., Passaic, N. J.

353. Luposec—Leaflet describing Luposec, a waterproofing agent with great stability; soluble in cold or warm water at all temperatures; suitable for all fibres and especially effective in splash-proofing silk hosiery. Jacques Wolf & Co., Passaic, N. J.

354. Vacuum Cup Pulleys—Leaflet describing the new Vacuum Cup Pulley which gives greater production, less power cost, less maintenance cost, and much longer life to belts and bearings. Vacuum Cup Metal Pulley Company, Inc., Detroit, Mich.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

359. Service Characteristics of Gate and Globe Valves—This bulletin contains valuable information on the procedures to follow in the selection of valves for almost every flow control problem in the textile industry. Crane Co., Chicago, Ill.

360. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco paper carriers, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

361. Thaumaphos — The textile detergent — Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

362. Leather Belting Calculator—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request. J. E. Rhoads & Sons, Philadelphia, Pa.

363. Form 769, Condensed Catalogue—a 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

364. The Superlock—Form 828—an attractive two-color illustrated 6-page folder describing the "Fastest Overseaming Machine in the World". Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

365. Catalog No. C-306—a 32 page Standard Conveyor booklet showing numerous actual installation photographs on roller, belt, slat, chain, wheel, live roller, push bar and vertical lift conveyors—also spiral chutes, tiering machines, portable pilers, lowerlifts, record lifts and pneumatic tube systems. Standard Conveyor Co., North St., St. Paul, Minn.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

128. Houghton's Hand Book for the Hosiery Dyer—This book contains the result of 69 years of experience in research and development of processing materials for the textile industries, together with a wealth of other data useful to every hosiery dyer. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Provdence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washing. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full-Fashioned Division, Norristown, Pa.

188. Form 496—This form enables you to gather your own cost data on your sewing machines and determine whether new Union Special Machines will show big savings. Furnished free by Union Special Machine Co., 400 N. Franklin St., Chicago, Ill.

COTTON, Grant Bldg., Atlanta, Ga.

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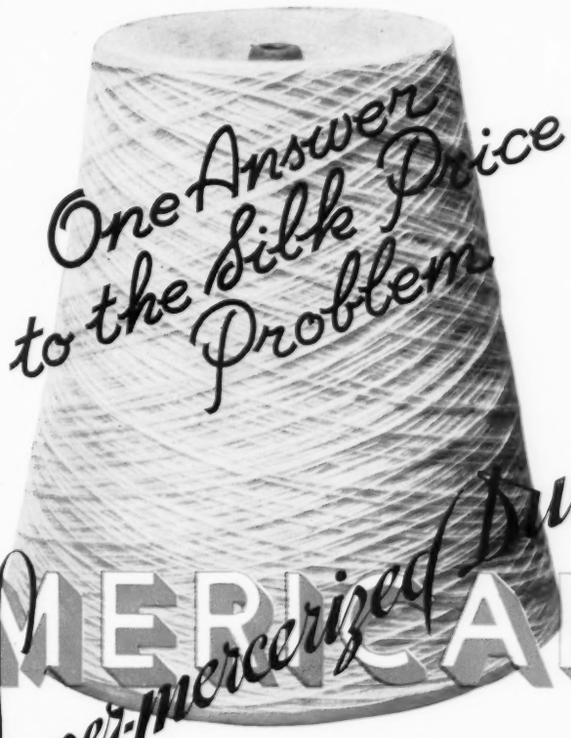

One Answer to the Silk Price Problem

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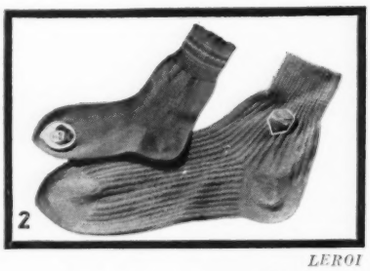
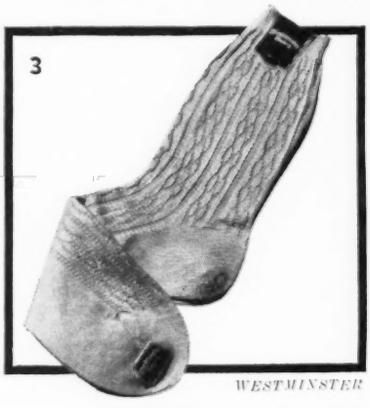
KNITTING CIRCULAR

BROWN DURRELL



LEROI

WESTMINSTER



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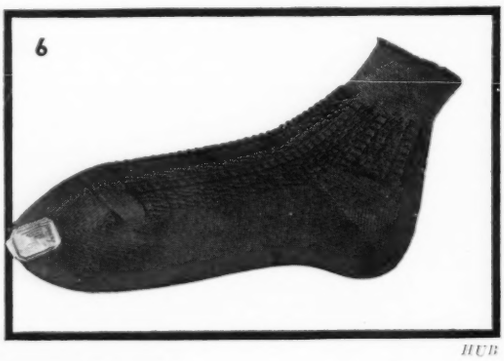
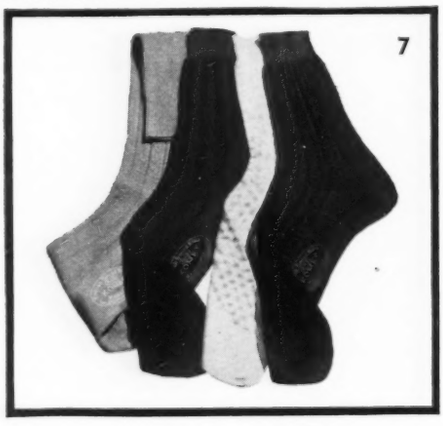


HUB



It will be a lively spring in the sock market. Lively not only from the pattern and style angle but from the color angle, too. The time-honored staples—flat knits and ribs—are in line to enjoy continued popularity and will be given fresh counter appeal with new colors and pattern effects. In addition, there is in every line—men's, women's and children's—one or more novelties that can be counted on to ring up extra sales. In all three fields, too, there are outstanding items in Links-and-Links hosiery—the sensation of the 1939 market and still young as a business getter. For men there are various new types of the Short Sock, a style that has been moving from West to East and is now a nation-wide favorite. For women and girls the knee-length sock offers new interest and will be promoted enthusiastically by several of the smartest Fifth Avenue fashion houses and at least one of the great class magazines. On this page are shown examples selected from the spring lines of leading manufacturers illustrating types which have market-wide endorsement.

Links-and-Links will be promoted in cotton and lisle in both regulation weights and in new light weight and fine gauge types. Illustration No. 3 is a Links-and-Links Short Sock from Westminster—Nile green with a striking variation of the cable stitch. First at the left in group No. 1 is one of Gordon's "Playmates", the name under which Brown Durrell are promoting anklets in "companion colors" to match-or-mix with sport fabrics. Next to it is a knee length sock for women to be promoted by a leading Fifth Avenue fashion store—also from Brown Durrell. It is shown in natural but comes in pastels and strong sport colors. No. 6 is a new Links-and-Links pattern in a children's anklet made by the Hub Hosiery Company.

Buyers are preparing for a record season with the Short Sock for men. In addition to the Links-and-Links items already mentioned staple knits of socks in this length are appearing. For example, the white sock with smart color-in-color clock and color-beside-color panel wrapping—from Westminster—No. 4. A short sock from Holeproof is illustrated too—the lower sock in No. 5. A regulation length from the same manufacturer, Holeproof's "Pacer" sock with the popular garter top, is shown with it.

Terry cloth—an outstanding favorite of the winter season—appears in new forms in the spring lines, both as body material and trimming. At the bottom in group No. 1 is a child's sock with a checked terry cloth top, another of the Brown Durrell "Playmates". Shown above this is a new idea in the ever popular ribs for girls. It can be worn up the leg or rolled down like a slack sock. Illustration No. 2 shows a pink ribbed terry cloth anklet for women and a baby blue child's anklet with a scalloped top and stripes that resemble embroidery—both from LeRoi Hosiery Company. In addition to all these, Scott & Williams presents a few of its own original patterns, which are illustrated in the panel at the bottom left.

All of the socks shown on this page can be made *economically* on Scott & Williams' machines.

SCOTT & WILLIAMS, INC., 40 Worth Street, New York, N. Y.

Established 1865

KNITTING SECTION

Treating the Water Supply

TREATING and deaeration of water supply for steam boilers to decrease their corrosive properties, has been known and practiced for many years. Except sand filteration, to remove suspended impurities, such as mud or sediment, water treatment for the bleachery and dyehouse did not receive much attention until the early part of the present century.

It has long been known that water containing mineral impurities in solution such as, bicarbonates, sulphates of calcium, magnesium, iron or manganese salts, caused more or less unevenness in the color deposit of the dye. However, very little was done about it until a process for water softening came out about the latter part of 1912.

This process used an artificial zeolite (hydrated silicate of sodium and aluminum) as a softening and filtering medium, which is practically insoluble in water. By simple filteration through a bed of this zeolite, water containing hardening impurities can be softened.

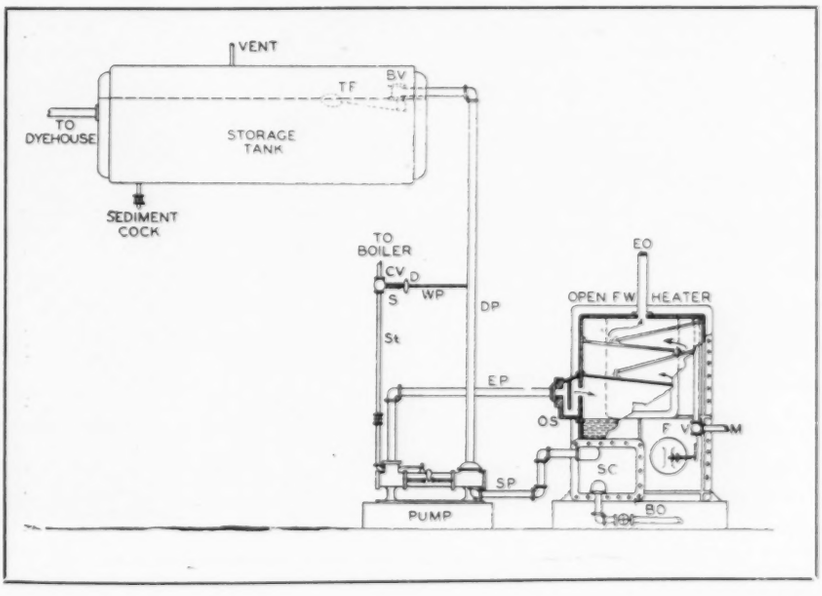
Hot Water Tanks

Quite a few mills have installed hot water storage tanks to heat water for the dyehouse, shower baths and laboratories. Ordinarily, these are closed cylindrical steel or wrought-iron tanks. The water enters from the supply main and is heated by coil pipes, through which steam circulates. This pre-heating of the water saves much time in the dyehouse as the liquor can be brought to the desired temperature much quicker and extra runs can be made. Also, much fuel can be saved if exhaust steam is used when available.

This system has one disadvantage; because the water enters and leaves the tank under the same pressure, considerable air is trapped in the tank. Air—which contains more or less free oxygen—will rust iron or steel when present with water. This iron rust may be carried to the dye machines and there cause trouble by staining goods. To prevent rusting, some mills have proposed copper or corrosion resistant metal tank and pipe connections.

The storage tank shown in the accompanying diagram is designed to prevent air accumulation. The purified water is forced up through the pipe DP, by the steam pump below, and enters the tank through a balanced valve BV on the inside of the tank. (Shown by dotted line.) When the water has reached the proper level, as indicated by the dotted line across the top, the float TF rises and closes the valve BV, this causes a back pressure in the pipe DP, which is transmitted through a small connecting pipe WP to the diaphragm D on the control valve CV. The water pressure on the diaphragm, which is connected to the valve stem, compresses the coil spring S, thus closing the control valve and stopping the pump instantly.

The purified water in the tank flows to the dyehouse by gravity. Any dissolved gases which may cause rust escape to the atmosphere through the vent pipe at the top. This is due to the fact that hot water will not hold as much free oxygen as cold water. When water is drawn off the normal water level is lowered; this causes the float to open the valve BV and release the pressure in the pipes DP and WP, allowing the coil spring S on the control valve stem to open the valve again and start the pump. Consequently, the tank is automatically kept full of hot soft water ready for use. The sediment cock, shown at the left on the bottom of the tank, is for blowing off any sediment



that may have gotten by the heater filter bed or in through the vent.

The Deaerating Water Heater

The deaerator is shown at the lower right hand corner of the illustration. It is simply an open feed-water heater of a well-known type. As the softened water which has collected at the bottom is drawn off by the pump, the float (the external portion is represented by the circle at F) lowers, and by means of lever connections, opens the angle valve V in the water supply pipe M. The water passes up the pipe and enters at the top, then flows in a thin sheet over a series of trays. Meanwhile, exhaust steam from the pump passes through the pipe EP to enter through the oil separator OS, and rising among the trays, heats the water. The gases held in solution in the water are liberated by the heat and escape to the atmosphere through the exhaust outlet at the top, while the mineral impurities in solution are precipitated by the heat and are deposited on the trays where it can be removed from time to time. The door D, indicated by dotted lines, permits this. It should be remembered however that if at any point in the system the treated water is allowed to cool and at the same time is exposed to air, oxygen will be re-absorbed and the benefits of deaeration lost. Water must be heated to about 215° F. to drive off oxygen properly and then must be either kept hot or outside air excluded.

A bed of coke near the bottom catches any remaining suspended impurities. A strainer SC is constructed so the coke can not enter the pump. Should traces of oil escape through the oil separator, being lighter than the water, it will collect on the surface and can be removed by flushing. The pipe and valve marked BO are for blowing out sediment that collects at the bottom.

The reason for using the direct-acting steam pump instead of the more modern centrifugal pump driven by an electric motor or steam turbine, is: The former is easier to control; the piston and plunger of the direct-acting pump move at slow speeds; and since there are no revolving parts, there is no momentum to amount to anything—it can be started or stopped instantly. Furthermore, the steam does its work twice; first, power for the pump, then the exhaust passing through the heater on its way to the atmosphere, heats and purifies the water.

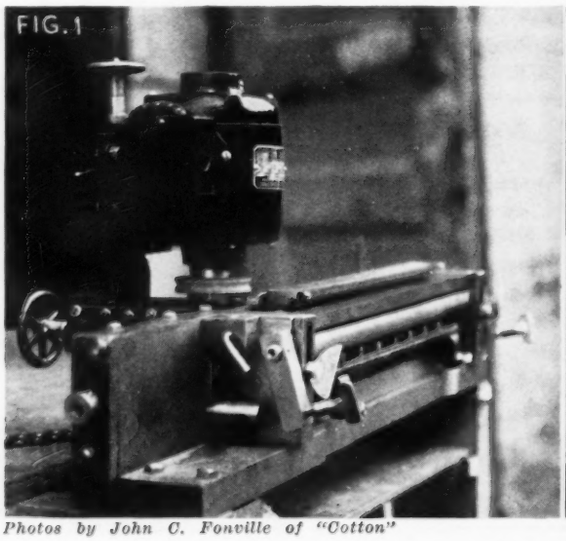
By connecting the boiler feed-pipe to the vertical pipe DP and using the necessary regulating devices, this outfit will also keep the water-level in the boiler fairly constant.

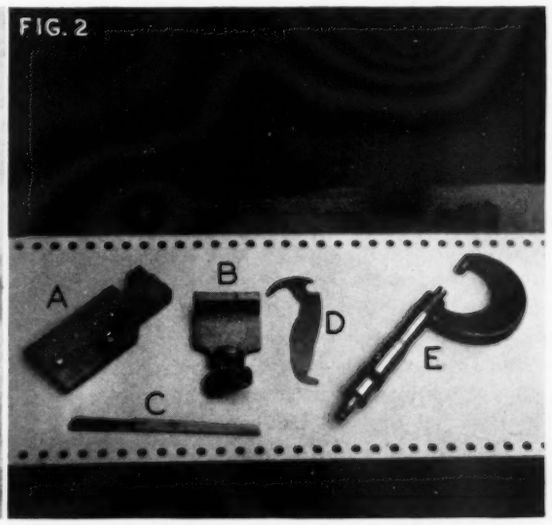
Machine to Grind Worn Jacks

IT IS a well-known fact that uneven jacks in full-fashioned machines cause the fixer trouble and often cause second quality merchandise. The jacks must be removed and those that are worn unevenly in the head ground to the same length.

There are many different ideas as to how the jacks should be ground. At our plant we use a machine that grinds the jacks, and it has proven satisfactory in every respect. This machine is shown at Fig. 1. It can be built in a well-equipped machine shop and will more than pay for itself in a very short time.

The jacks are simply inserted in the "head" on the machine, and are traversed back and forth, with the emery wheel attached to the motor doing its work. The jacks must not be ground fast or the temper will





Photos by John C. Fonville of "Cotton"

Fig. 1, complete grinding machine for full-fashioned jack heads. Fig. 2, equipment for measuring jacks.

be lost and the jacks will become soft—an unhappy condition for them to get in.

In grinding the jacks it is better to get them as nearly the same size as possible, because there is little need in grinding the longest jacks down to the shortest ones. That is, when grinding the worn jacks, gauge all of them and separate them into lots of various lengths, and then grind all those in the separate lots to the same length. Jacks in the different heads on a machine do not have to be the same length, but jacks in the same head must be the same length to give quality work.

Gauging the worn jacks requires a little time, but with the device we have made at our mill for gauging the jacks, this work has been cut to a minimum of time. Fig. 2 shows the component parts of our gauge. "A" is the steel body, "B" is the wing nut component part, "C" is the sliding gauge, "D" is the jack to be gauged, and "E" is the micrometer gauge.

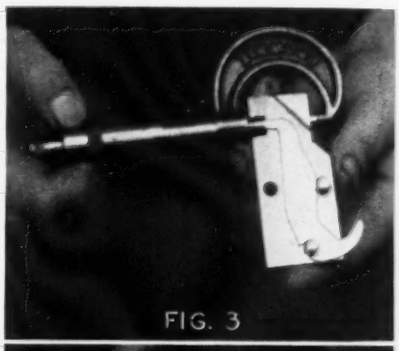


FIG. 3

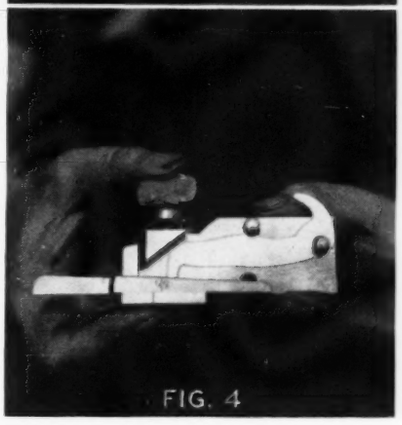


FIG. 4

To get our pattern, the jack is inserted in the steel body of the gauge as shown in Fig. 3, and is tested for wear with the adjustable micrometer gauge. When this measurement is taken, the micrometer gauge is removed and the wing nut component is placed on the body, as shown in Fig. 4.

From this point on the sliding gauge is used for greater speed, and the jacks are simply inserted as fast as a man can do so, with the sliding gauge being pressed in each time to determine the amount of wear in the jack.

As previously stated, when gauging the jacks, those of a certain length are separated and ground separately.

Of course, if it should happen that one section should have a smash and injure some of the jacks, this jack head would have to be taken out and reground.—H. S. H.

Belts—Crossed or Straight

EDITOR COTTON:

This is in answer to the question on straight or crossed belts* submitted by "CONTRIBUTOR No. 6755". We run a great number of ¾-inch and 1-inch belts, both straight and crossed. With conditions being equal, we find that the crossed belt will give us about 5 to 8 r.p.m. more than the straight belt. As a matter of convenience, it is much better to run straight belts as they are easier to get to when cleaning and dressing.

We also run several 8-inch and 10-inch belts straight and crossed. We find that belts of this size are much better when we run them straight, especially if they are running on crown faced pulleys. We have one condition, however, where we cannot run a 10-inch belt straight on either a crown or flat faced pulley; this is where the belt is subject to a great deal of moisture.

I can find no appreciable difference in the cleanliness of the straight and crossed belts; however, all of our belts are cleaned regularly.

As far as I can see, there is no particular advantage in either the crossed or straight belt. Of course, if two lines of machines are being run from a floor shaft, it is absolutely necessary to run one line with crossed belts.

The straight belt may, perhaps, have the slight advantage over the crossed belt in regard to life. There is some slight friction at the cross if the belts run slack enough to touch. I have been unable to determine anything definite regarding this for the simple reason that the average belt properly cared for lasts so long that saturation with oil from the machines is approximately the only reason for their wearing out and losing their usefulness.

CONTRIBUTOR No. 6870

*Original question appeared on page 122 November 1938. Other answers in May 1939.

Soft Drink Dispenser

EDITOR COTTON:

We have recently installed an automatic soft drink dispenser in our plant for the benefit of the operatives, and we are satisfied with its results.

Previous to having this dispenser, which is operated by inserting a coin, our operatives either took time to go outside and buy their morning and afternoon refreshment or sent someone from the mill. This incurred a loss in production.

With the dispenser located in a convenient place in the mill the operatives do not have to walk far for their drinks, and do not have to stay away from their jobs as long.

This dispenser is put in for a small charge, paid monthly, and after several years it becomes the property of the mill. There is not much actual income from the dispenser itself, because the tax on it is high, but it is an asset to the plant, an aid to the operatives, and it increases our production by having the employees stay in the mill instead of walking around outside.

CONTRIBUTOR No. 6961

—and the best man wins!

As the race for profit in full-fashioned knitting becomes more and more a race for technical superiority, the demand for "TMW" Needles shows a strong and steady increase.

TEXTILE MACHINE WORKS • READING, PA.

"Time does not bow to you, you must bow to time"

RUSSIAN PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

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KNITTING KINKS

Operating and Fixing Model ES Machines

Article 10

By Emmett Starr

THIS is the tenth article in a series* concerning the care, operation, and fixing of the Model ES machine. The series is written with the assumption that the reader has before him the S&W catalog of parts pertaining to the machine. Should you wish any particular phase of fixing discussed, the author will be glad to do so upon request through the editors.

CONTINUING our discussion on the fixing of the Model ES machine, we come to the setting of such parts as the down pick controlling bracket and lever.

Looking at Plate 16 in the Model ES catalog, when the down pick controlling bracket (3715) and the switch cam bracket (3714) have been removed, great care should be taken in replacing them. It is best when removing the down pick controlling bracket, providing that it has been giving satisfaction in its operations, to mark the down pick rod (10872) Plate 7 in order that the bracket can be replaced in its same position, to avoid making any unnecessary adjustments on the various cams that the bracket controls.

In replacing the down pick controlling bracket, when the down pick rod has not been marked, let the down pick controlling lever, to which the down pick rod is connected, rest on the main pattern drum. Set the bracket down as far as possible on the rod as this will let the bracket rest on the bed plate, then the proper setting of the switch cams can be made by their adjusting screws. It would be advisable to check the down pick controlling lever plate (14596); the plate very seldom comes loose, but make sure that it is securely fastened to the lever before making any adjustment on the various adjusting screws.

Two dowel pins are used to keep the switch cam bracket in its original position; the only trouble that may develop when replacing the switch cam bracket is that there may be lint or other substance under the bracket causing it to be tilted. Failure to tighten the down pick controlling bracket set screws and the switch cam bracket screws securely will result in the brackets becoming loose, thereby causing the needles not to be raised or lowered properly and also the dropper (12470) Plate 12 not to function properly.

The down pick controlling lever (100280) Plate 7 when not resting on any drum cams lets the dropper swing upward to its highest position and at the same time allows the switch cam operating pin to rest on the lower operating lever which puts the lowering switch cam in action.

There should be a little play between the cylinder and the lowering switch cam to avoid undue wear on the cylinder, allowing the cam to be inserted far enough to draw down the extra short butt needles as well as the short, medium and long butt needles. The lowering switch cam is in action when in the process of making the leg and foot and should draw the needles low enough to pass under the auxiliary raising cam (200102) Plate 12 except those needles that have cylinder pattern jack under them and are selected to be raised by the jack cam. The needles when raised will be elevated by the auxiliary raising cam so as to take on the wrap yarn.

When working around the machines do not lay any cams on the top bed plate as they are likely to be accidentally pushed under the down pick controlling bracket. This will cause the bracket not to drop all the way. In the event that the bracket is kept from dropping the lowering switch cam will not be inserted far enough to draw down all the needles. Those needles that are not drawn down will be raised by the auxiliary raising cam, whether they have any pattern jacks under them or not, and whether they are selected or not selected to be raised. This generally happens to the extra short butt needles when not drawn down by the lowering switch cam, due to the cam not being inserted properly.

As the long and medium butt needles are used in making the heel and toe the lowering and raising switch cams should be inserted so as to lower or raise the extra short butt needles as well as the regular short butt needles but avoid having the switch cams rub or bind against the cylinder.

The auxiliary move just before the main rack going into the heel, inserts the left lowering cam which draws the medium and long butt needles down so they will pass under the end of the raising switch cam in order that the switch cam can be inserted to raise the instep needles. When the heel and toe side needles are not drawn down either when racking into the heel or toe, failure of the left lowering cam to function pro-

*The other articles in this series appeared in the Knitting Section of the August, November, and December 1938 issues, and the January, March, July, August, November, and December 1939 issues. More will follow.

perly, the raising switch cam could not enter as it would bind against these needles. Failure of the left lowering cam to draw the medium and long butt needles down before changing to heel or toe is generally caused by carelessness in not replacing the bracket in its proper position and when re-setting the cam to tighten the screws. The left lowering cam and bracket when properly set and adjusted will operate indefinitely without any trouble.

The race of drum cams that governs the action of the down pick controlling lever consists of three heights—high, medium and low. The controlling lever being raised when going into the heel or toe releases the lowering switch cam, letting the cam drop back from action, and inserts the raising switch cam; and when raised to its fullest height by resting on the high drum the raising switch cam will be or should be inserted far enough to raise the instep needles without the switch cam coming in contact with the cylinder.

There should be a little play between the switch cam and cylinder to avoid any unnecessary pressure on the various parts that control the action of the raising switch cam, safe guarding these parts from becoming bent or broken also keeping the cylinder from being damaged. At the same time the raising cam is being inserted the dropper is lowered from action as the dropper plunger comes in contact with the dropper controlling pin in order that the dropper will not take any needles down until the widening process of the heel or toe begins. The dropper plunger is kept from lowering the dropper too far by the down pick stop.

At the end of the rack going into the heel and toe the controlling lever drops on to the medium height cam releasing the raising switch cam so that both the lowering and raising switch cam are out of action during the heel and toe, the dropper still remaining out of action. The dropper is inserted to widen the heel and toe when the controlling lever drops on to the low drum cam. A main rack, at the completion of the heel, inserts the lowering switch cam at the beginning of the stroke about 2 inches before the first low butt or instep needles. If these needles were not lowered at this point they would take on the wrap yarn instead of these needles that have pattern jacks under them and are selected to be raised by the auxiliary raising cam.

Going off the toe the auxiliary lowering cam moves into action to draw the short butt needles down from the inactive point. The lowering switch cam does not operate when going off the toe.

Very little difficulty is encountered when it becomes necessary to remove the lowering and raising switch cams. The simpliest and easiest way is to remove the switch cam operating pin from the down pick controlling bracket, unfasten and remove the switch cam bracket, unhook the switch cam springs and remove the switch cams. No adjustments of any kind have been disturbed. It would be a good time to inspect the switch cams whenever they are removed. When badly worn and nicked they should be polished so that the needles can be elevated or lowered smoothly and evenly. A worn or nicked cam will cause the needles to jump or vibrate thereby putting a strain and causing wear on the needles, cams, and cylinder.

Multiple or Single-Job Finishing Operations

EDITOR COTTON:

"CONTRIBUTOR NO. 6937" has brought up an interesting question when he asks whether it is better and more efficient to have the single-job or the multiple-job operation in the finishing department. That is, whether it is better to have each operative only do the ticketing, banding, pairing, etc., or have each operative do every job or more than one job in the finishing department.

We admit in the outset that we have seen the multiple-job system in operation in seamless hosiery finishing mills where the management seemed highly pleased with the system. Nevertheless, we felt at the same time that the system had not been fully or properly analyzed and that best results were not being obtained by the multiple-job system.

To bring this question out in the open so that all phases can be thoroughly analyzed, we would first answer the question by asking a question. If the multiple-job operation has been found advantageous, or is believed to be advantageous, why does not the same system apply to the gray goods departments such as looping and seaming? Granting that certain diversions on a job, and that certain restfulness might be developed if the operatives change their work occasionally, why not work up a system of allowing a girl to take a certain number of dozens, first loop them, then back seam them, then give them the gray inspection, and finally complete the gray goods operations by mending imperfect goods found in the inspection operation?

Naturally those favoring the multiple-job operation in the finishing department might argue that no difficult machines such as loopers and seamers are tied in with the operations in the finishing room. We would answer this question by saying that in a finishing room where quality merchandise is going through there are operations just as important and requiring just as much technical training and skill to do a good job as will be found necessary in the looping and seaming operations.

Getting back to the finishing room and a well regulated system for quality merchandise, we would say that the operations should be divided preferably into at least four different operations and to four types of operators. First would come the finished goods inspection, where the imperfect work is separated from first quality. Second, the pairing operation where sec-

*The original question appeared on page 121 of the September 1939 issue. Further discussion may be found on page 129 of the November 1939 issue.

ond inspection can be given first quality work as it is being paired or mated. These two operations are best carried out by operators who have been selected for this particular type of work, preferably girls of slender build, good average height, and long arms, as this type of operator is best suited to the inspecting and pairing operations.

Following the inspecting and pairing operations comes the transfer operation, where girls of different build, shorter arms, less perfect eyesight, etc., can be used to good advantage and to satisfactory service.

After the stamping or transferring operation comes the operation of folding and boxing, which may take various forms of packages such as individually wrapped pairs, cellophane packages, quarter-dozen pack, half-dozen pack, etc. Here again girls with good eyesight, nimble fingers, and speedy characteristics should be brought into play. In this operation girls who have had experience in the inspecting and pairing operations will be found best qualified, and it can and should become their duty to catch and throw out substandard merchandise which may be passed down from the previous operations.

With the present existing schedules of work hours in most plants of today, where 40 hours per week or less are worked, and not more than eight hours per day, there is nothing much to worry about on the subject of fatigue, rest periods, etc., and it is our judgment that best results will come in the finishing room only when each individual operation is carried out by a skilled operator, trained specifically for the one operation that may be assigned to her.

With the average complications found in finishing rooms of today, such as styles, colors, trade marks, etc., in almost alarming multiples, it is hard enough to avoid mix-ups and misunderstandings by having operators trained for each individual job, and it occurs to us where the multiple-job is in operation under such circumstances as existing in the average hosiery finishing room of today that orderly handling of a customer's order, finally rounding it up to the packing table, would produce an almost impossible situation. It is a frequent occurrence for a customer's order of 10-15 dozens be divided into three or four styles and 12-15 colors, and we are of the opinion that the multiple-job system under such circumstances could only result in multiplied chaos.

CONTRIBUTOR NO. 6944

◆

EDITOR COTTON:

To have an efficient finishing department it is better to have one operator for one special kind of work. Some mills have the classifier and pairer do the same job, but this is inefficient as a classifier should have her mind only on one thing, removing the bad work.

Often in small mills when the classifier has caught up on her work she is sent home, in such cases it would be well to let the girl classify and pair also, which would increase her rate of pay.

I do believe that the girls should be trained for every step in the finishing department, so that the mill will not be short of operatives at any time, but the girls should specialize in the type of work for which they are best suited. CONTRIBUTOR NO. 6947

Picot Jacquard

EDITOR COTTON:

In his question on page 177 of the October 1939 issue of COTTON, "CONTRIBUTOR NO. 6958" is having trouble with his picot Jacquard on the full-fashioned machines. The loops have a tendency to drop low on the picot points, knock-over, and around the needles, causing the machine to drop stitches. This occurs when the Jacquard pattern is heavy and requires consistent and fast dipping of the narrowing machine, especially on new short needle machines where movements do not give much latitude for adjustment.

In trying to help this man, we assume of course that the narrowing machine and needle bars are in their proper position.

A lace helping cam may be utilized on some types of machines to eliminate lace trouble but changing slightly the relations between the picot bar and the needles.

On the latest type machinery we have found that the best way of correcting lace trouble is to bring the picot bar slightly away from needles when running a heavy welt thread.

This seems to be a sketchy report, but we feel that if these suggestions are followed and if the machine is properly lined up no trouble will occur.

CONTRIBUTOR NO. 7012

◆

EDITOR COTTON:

This has reference to the picot Jacquard trouble that "CONTRIBUTOR NO. 6958" is having on his full-fashioned machines.

The contributor's trouble with the machine dropping stitches in the lace may be due to the needle beards being too flat. If they are too flat they will mispress and drop stitches.

Too much pull on the take-up roller may also be a cause for drop stitches. Another cause may be dry silk. Dry silk does not possess the elasticity of moist silk, and therefore the tension on the needles will be greater when running very dry silk. This may result in dropped stitches when the lace point transfers the stitch.

The writer suggests that the needles be checked very carefully, as the needle beards may not be properly pliered. On lace work, needle beards should be pliered a little higher than on plain work. Where a mill is only using lace in the welt design, a happy medium should be struck.

CONTRIBUTOR NO. 7013

◆

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 6958" is having trouble with the picot Jacquard on his full-fashioned machines, stating that the loops have a tendency to drop low on the picot points, knock-over, and around the needle, thereby dropping stitches. This question appeared on page 177 of the October 1939 issue.

As he writes that he has this trouble, especially on the short needle machines, I take it that this trouble is general and not confined to one particular ma-

They mean a LOT to me

"Sleek-fitting stockings may not make a debutante a glamour girl—but they certainly do help! I consider them as much a part of my beauty equipment as cosmetics or jewelry. It's sleekness and sheerness I look for—just a shadow of a stocking. It's marvelous what such hosiery can do to give a girl's legs and ankles, and clothes too, an extra touch of charm."

The better you can meet the sophisticated demands of this girl for sleekness and sheerness the more she will value your hosiery as an essential part of her wardrobe. Win the prestige that the patronage of this type of customer brings. Torrington Needles—the smoother finished, more uniform machine-made *needles—will help you produce the smooth, flawless effects that meet with her approval.*

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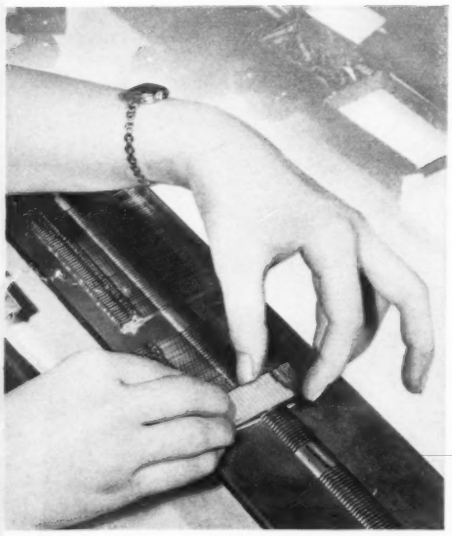
TORRINGTON

Needles and Sinkers

CAMERA DISCLOSES SECRET OF THE EXACT FIFTY COUNT IN TORRINGTON NEEDLE PACKAGES!



Skilled hands place the needles in slots of a bar with 5 sections of 50 slots each.

A turn of the knob drops the bar leaving needles on the table in neat groups of 50.

PHOTOS REVEAL HOW PRECISION METHODS ASSURE USERS FULL COUNT, FULL QUALITY IN EACH PACKAGE

Here, for the first time, the camera reveals a secret . . . why you *always* get the correct number of needles in every Torrington package . . . why the count of 50 never varies!

The method is simple but amazingly efficient. With a quick motion of the hands, trained workers place the needles in the slots of a bar, as shown. Each section of the bar has 50 slots.

When all five sections of the bar are filled a knob is turned that flattens the bar—and the needles lie on the table in neat groups of fifty. Deftly, the operator slides each group into an envelop. Five envelops . . . 250 needles—never more or less.

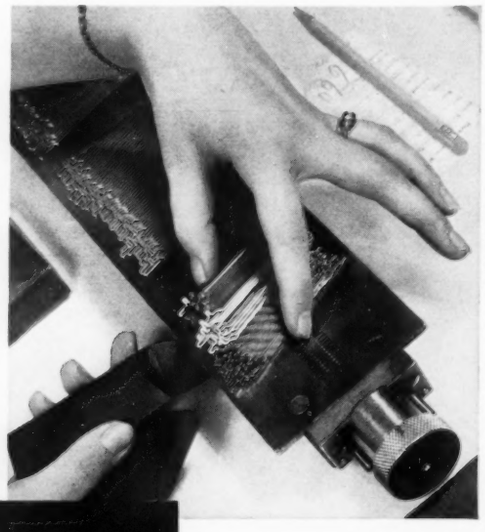
Astonishingly simple—but error-proof! Knitters tell us this accurate count saves them time and trouble . . . prevents loss . . . helps keep needle records straight.

A word about the envelops. Perhaps you have examined them. Strong. Exceptionally tough. Acid-free, too. This means that Torringtons come to you in the same clean, rust-free condition in which they leave the factory.

Torringtons are the *machine-made* needles—precision manufactured. Precision counted and packaged also. Trust Torringtons to arrive "in condition" to do your knitting jobs well!

Deftly the operator gathers each separate group of needles between thumb and forefinger.

They are then put in strong, acid-proof paper envelops—always 50 needles in each envelop.



TORRINGTON
LATCH NEEDLES

THE TORRINGTON CO., TORRINGTON, CONN., U. S. A. • ESTABLISHED 1866

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The Torrington Company, 538 South Wells St., Chicago, Ill.
The Torrington Company, Guilford Bldg., Greensboro, N. C.
The S. M. Supplies Co. . . . 210 South Street, Boston, Mass.
Blelock Manufacturing Co., 1709 Locust St., St. Louis, Mo.
E. G. Paules . . . Bendix Building, Los Angeles, Calif.
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chine. If the trouble is general, it therefore cannot be a mechanical trouble.

I feel that his trouble is caused by the oil soaking of the silk, which he gets from the throwster.

In recent years, especially since the event of the three-carrier system, all throwsters have been compelled to give the hosiery manufacturer a silk that would take moisture rapidly and also retain this moisture for a long period of time.

In order to get this result, it is necessary for the throwster to use a soaking oil that will put the silk on a high alkaline side.

Silk too high on the alkaline side has a tendency to be too soft and if excessive amount of oil is used it seems to slide off the picot or lace points when making lace or Jacquard patterns.

As each throwster has his own pet formula for soaking of silk, one cannot tell just what can be done to overcome this trouble.

However, every reliable throwster is only too glad to assist if possible and therefore I would suggest that the contributor ask the throwster to give him different types of soaking, using for each type about 10 pounds of silk and try these out to see if it does solve his problem.

The reason I feel certain that the contributor's trouble lies in the silk he is using, is that several years ago when mesh hosiery was popular many manufacturers had this trouble and I know that in most cases it was solved by the throwster.

Therefore when one has this trouble and feels sure that all picot points are standard in length and the width of the groove is correct and all adjustments are correct, then the trouble must be in the material that is being used and that is where a change should be made. CONTRIBUTOR No. 7014

Loose Lines in Seamless

AN INQUIRY to the editors of COTTON said: "We have been having a considerable amount of trouble with loose lines appearing in our seamless hosiery. We can line up the needles and sinkers in a machine and have the stocking fairly well rid of all loose wales, but after running the machine for two or three days they quite often reappear. Could the dial jacks have anything to do with the loose lines? One fixer says jack dials never go off center while another says they do and he wants to line up the jack dials periodically. We are using the Scott and Williams 280-needle 3½-inch Model K machine."

EDITOR COTTON:

In answer to the questions of the man who is having trouble with loose lines in his seamless hosiery:

If the dial is running off center it is possible that the jackless needles are striking the bottoms of the dial jacks as the needles rise to receive the loops from the jacks during the transfer. These needles should be raised to pass directly through the opening formed by the forward and the rear halves of the assembled dial jack. If the needle strikes the bottom of the jack during this operation, the hook may be bent downward and back toward the needle shank, almost closing the hook and distorting the stitch as it is cast off. As "CONTRIBUTOR No. 6585" makes no mention of damaged needles, however, I doubt that this condition is present.

The left-hand stitch cam should be checked to see that it is free from nicks and has not been ground too steeply. A new cam should replace the old one if necessary. The left side cam should be perfectly free from nicks and properly set, that is, as close to the stitch cam as is possible without binding the needles. Otherwise, undue vibration will occur at this point.

If several persons are replacing damaged needles, a uniform amount of bow or friction should be agreed upon to prevent the possibility of extremely tight or loose needles being placed in the machine.

The three-cylinder spring bands should be checked and tightened if necessary or replaced with a new set of three if they are badly grooved.

Poor jobs of inserting cylinder walls are often responsible for much of the loose wale trouble. If the new walls are not driven to the full depth of the cylinder slot, or if a small bead of solder is left in the needle slot, the needle will be forced outward and will stretch every loop cast off it. In many such cases the offending needle may be pliered to shape to make a fairly regular stitch but in replacing it, this precaution is overlooked and a loose line results. The best remedy is, of course, prevention.

To insure perfect work the sinkers must have freedom of movement. If the old style brass or inside sinker ring is used, the walls should be checked to see that none is binding. The slots of this ring should be free from small mats of lint which tend to raise the sinkers above their normal level. The inside of this ring should be kept clean of the wadded lint which will collect there. Each of these things tends to distort the stitch. Also, the sinker spring band should be strong enough to hold the sinkers at their "in" position.

Most of the foregoing suggestions are advanced with one particular troublesome machine in mind. If the trouble is general throughout a set of machines, however, here's an idea which occurred to me: as a piece of matted lint in a needle slot often produces the same effect as the bead of solder previously mentioned, is it possible that this loose wale trouble is a result of the cleaning method? If compressed air is used for cleaning the machines, perhaps the cleaner is in some way forcing lint behind the needles. Unlikely, but it is worth investigating if all else fails.

Query No. 2 is, in effect: Fixer "A" insists that jack dials never go off center. Fixer "B" contradicts this and advocates periodic lining up of the dials. Which is right?

Well, the machine builders provide a circular metal plate for the express purpose of centering up a dial. Also, a previous contributor to this paper thought the subject of enough importance to write as follows: "If the jack dial cannot be gotten in line with the cylinder needles, centering up of the jack dial is necessary. The following is the procedure: Take off the dial, dial levers, dial plate, and remove the gear cover from the dial gears; mark the gears so that they can be meshed back again in exactly the same place; then pull out the dial shaft and remove the gear that the shaft goes through. Put the machine on the heel or toe, raising all of the short butt needles level with the long butts. Put in the centering dial for the purpose with the hub pointed down into the cylinder. Take out the two pins holding the cross bar No. 5557. Loosen up the screws holding the cross bar No. 5557. Put the cover down and adjust the shaft hole in the cross bar No. 5557 so that it is in a perfect line with the hole in the centering dial. Then tighten the screws that hold the cross bar No. 5557, being careful not to get it out of line with the centering dial while doing this. Ream out the pin holes, putting in larger pins. Put back together."

From observation and experience I disagree with Fixer "A" and also disagree with "B" who says that a "periodic lining up of the dials is necessary." An inspection, perhaps, which is easily made by observing the position of the dial jacks in relation to the jack-raised needles as the dial jacks are pushed between those needles during the make-up and the transfer, but a re-lining, no! If a dial requires centering, the fact usually becomes painfully apparent quickly.

I still believe, as one of my first instructors told me, "When they're runnin' all right, leave 'em alone".

CONTRIBUTOR No. 6589

EDITOR COTTON:

The solution of the problem presented by "CONTRIBUTOR No. 6585" involves several factors, any one of which might cause the loose lines.

First, he should make sure that the inside-sinker-ring is not unduly worn so that the needles are not in circular alignment.

Second, he should make sure that all needles are straight and of equal friction in their slots.

Third, he should check sinkers to see if there is unevenness caused by wear. If they are badly worn they should be replaced by new ones.

Fourth, he should check the needle-raising cam which follows the left-hand stitch-cam to see that there is just enough room for the needle butts to pass between it and the stitch cam without any play.

Fifth, he should check the bumper-screws on the sinker-cam-ring and so adjust them that when the sinker-wave is at its inmost point, it will coincide with the needle wave at its lowest point. In other words, when an individual sinker is at its inmost position, the needle next to it should be at its lowest point. This setting of the sinker-cam-ring is much more important than most machine men realize, especially when plaiting is being done.

In checking over the above points it should be borne in mind that all cam surfaces should be without nicks, and be well polished and not worn out of shape.

Now let us consider the jack dial. It should always be in correct alignment to get satisfactory results, but if the alignment is not off enough so that the needles are bent, this should not cause the loose wales referred to. I never adjust a machine to overcome any particular fault in the fabric, but rather to see that the machine is in good mechanical condition and adjustment.

CONTRIBUTOR No. 6590

Verge Plates

EDITOR COTTON:

Verge plates are one of the most important links in producing a good full-fashioned stocking. There are many different types of verge plates in use, and we shall greatly appreciate the advice of your readers in telling us which type has been found most satisfactory, that is, in eliminating streaks in the fabric, wear and breakage of the sinkers.

Some types have holes in them, others have slots, and still others have a composition face. We realize the purpose of the various types, but we would like to know which one has been found the most satisfactory in actual mill practice.

Along this same line, should the sinker strike the verge plate square on the face or is there a certain angle at which the sinker butt should rest against the verge plate to give the best result?

What is the most satisfactory clearance between the verge plate and the sinker to give the best results in regard to good fabric, wear and breakage of the sinkers?

CONTRIBUTOR No. 6957

Cause of Menders

EDITOR COTTON:

We have a 24-section full-fashioned machine on which we are running a lace stocking. This particular machine is the end machine and there are windows running halfway the length of the machine. We are always having trouble with the lace bars going off on this one end of the machine. This footer has the lace style under the narrowing rack and controls the shifting of the bars from the one end. We have the trouble on the end fartherest away from the dial, which is the end also fartherest away from the windows.

At the slightest temperature change the bars on the end away from the windows go off with the result that menders and bad stockings are made in at least 11 sections.

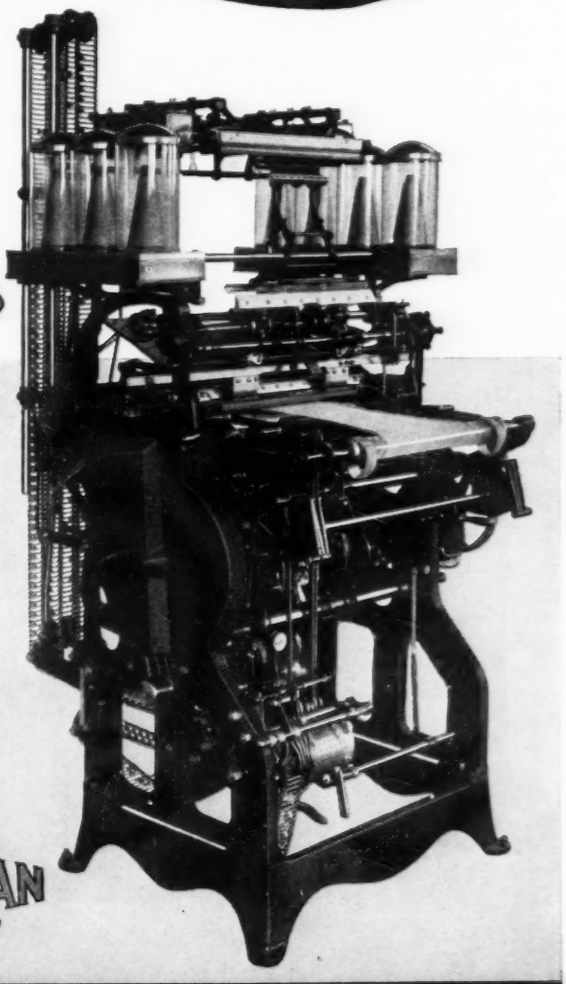
Is there any way of stopping the expansion and contraction of the half-inch cold rolled steel rod that the lace bars are fastened on?

This machine can be stopped at lunch time with a set of perfect stockings run halfway, and when started up a half-hour later, the bars will be off and spoil or make menders on this one end.

CONTRIBUTOR No. 6980

Eyes on the Machine, please!

. . . the creator of real stocking perfection



Yes! this wonderful machine knits the entire stocking—perfect *from top to toe* in ONE OPERATION.

Has many other conveniences and economies, —is completely factory-tested and shipped assembled, ready to go into operation in your plant a few hours after it arrives. Then you can, at last, be free from the limitations, troubles, seconds and rejects caused by leggers and footers. Write for complete details.

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WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

TRENDS AND HIGHLIGHTS OF THE
KNIT GOODS MARKETS

Silk Advancing Over $4.00 Creates Additional Problems for Hosiery Industry—Full-Fashioned Mills Curtail Drastically—Underwear Industry Gradually Getting Higher Goods Prices in Effect—Retail Volume Larger Than Year Previous But Not Booming—Consumers Want Old Prices

Philadelphia, December 16, 1939

THE SEASONAL DECLINE in activity among hosiery mills in this section started earlier and was more severe than usually seen but in the underwear industry, manufacturers are busier than at a normal year-end as many of these and their customers are active, taking in and manufacturing all the goods possible, before the industry makes its wage change, which is expected early in the new year. Both industries have been confronted with price increases in their yarns over the month; in full-fashioned hosiery silk has gone up to more than $4.00 a pound compared with $1.82 early this year or slightly more than $1.50 at the low of 1938 while cotton has advanced almost 2 cents a pound on the exchange and combed spinners report that staple cotton has increased to an even greater degree. These factors mean coming higher prices for hosiery and underwear.

Full-Fashioned

Difficulties of the full-fashioned hosiery trade have become more acute over the last month, in which period silk has gone up another 60 cents, creating a new top for more than ten years. Previously knitters said they could not merchandise their goods actively due to the necessity of quoting higher goods prices and the new increase in silk has made this even more of a problem; there is no question that hosiery prices will have to go higher for spring. The only question is, how high will this be. During the last month full-fashioned plants in Pennsylvania have been on curtailed rates as knitters found their holiday demand declining earlier this year than normally seen and also because knitters refused to make up stocks out of silk so much higher than they could get out of hosiery. The result early next year will be that constructions of many hose will be changed, lowering quality to meet a retail price demand and at the same time, there will have to be higher prices named unless the manufacturers want to go out of business. Such periods of major price changes always are difficult periods.

Half-Hose

Half-hose mills have been operating at good rates on the spring lines made from silk, cotton and rayon. They finished the wool lines early this year and notwithstanding the fear wool hose imports would be stopped this has not helped domestic producers much this season which jobbers say has been due to the warm winter so far experienced. Many consumers in this section have not yet bought nor put on wool half-hose and chances are many will not buy them at all this winter. The outlook for spring is good and elastic top socks and slacks that have created so much attention in the last couple of years will make even higher records in the coming season. Goods prices are going up slowly as higher cotton, rayon and silk prices work through; but there is a definite policy of many knitters to turn out goods that will be the same in price. This means changing the construction and substituting one yarn for another. This, in fact, is one of the major trends in the hosiery industry at present. Although more people are at work retailers find they do not individually have more to spend; this means unless they are able to get goods at about the old prices volume will diminish as prices advance.

The sheerness of women's hosiery manufactured from Nylon yarn is demonstrated in this picture. Stockings made from this material will dry extremely rapidly after laundering. The fibers are substantially as strong when wet as when dry. Courtesy Du Pont.

Seamless

Production of women's seamless hosiery this year will show no important change either way compared with the previous year. The business at present and as it has been, is steady but with no boom. Prices of silk seamless are very strong because of the situation in silk and there is considerable working in of rayon mixed with silk in such types to keep costs down. Yet many knitters state that even though they want to use more rayon in their spring lines they have found rayon yarn sellers unable to keep them supplied with all the knitting cones they need so that knitters' problems in this period are more difficult than the industry has faced in years. Even though there have been drastic increases in most types of yarns in recent weeks, jobbers report that knitters in some instances are offering them children's lines for spring at unchanged prices. This can only mean that different constructions are used and that yarns previously used have been switched into cheaper sizes or qualities.

Underwear

The underwear industry, operating at good rates, and having experienced an active fall season with most having

Finish—

So Important to Appearance and Quality

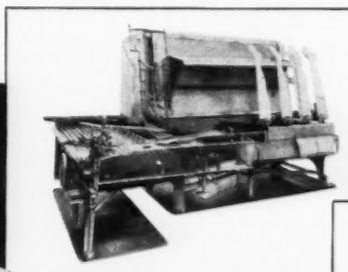
Proctor Automatic Boarding Machines have long been noted for the unvaryingly excellent finish they impart to hosiery . . . whether light, medium or heavy weight, seamless or full fashioned, for women or men. This fine finish is the result of uniform *external* drying by fan-circulated warm air, and may be enhanced by the addition of the Proctor Auxiliary Conditioner. This Conditioner automatically moistens the entire stocking after it is on the board, before it enters the drying chamber . . . eliminating all dry spots. And, too, it permits boarding the stocking with less moisture in it . . . reducing the possibility of damage.

As to quality production on the Proctor Machines . . . it may be as high as the manufacturer demands, limited only by the mechanical speed of 32 dozen pairs per hour on the 2-operator machine for women's hosiery, and 52 dozen pairs per hour on the 2-operator machine for men's half hose. This, in less than 9½ x 11½ feet of floor space for either machine!

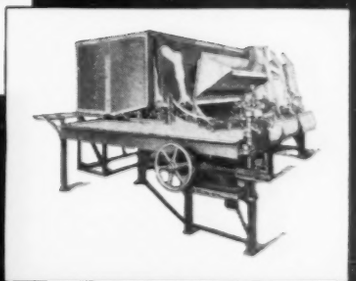
Every consideration has also been given to the ease and comfort of the "boarder" in the design of these machines . . . no tiring, back-breaking, arm-straining movements while boarding are necessary.

The price of these machines is such that the buyer is assured a substantial return on his investment.

PROCTOR & SCHWARTZ • Inc • Philadelphia



Automatic Machine for Women's Hosiery



Automatic Machine for Men's Half Hose

Proctor & Schwartz BOARDING MACHINES

spring orders to run into the new year are gradually working their prices up but not nearly so fast as their own costs have jumped. Most feel the goods advances so far made are only the beginning. In addition to the raw material increases there is the new wage minimum to be made for the underwear industry which will raise costs more, the only question being just when this will be. The new rate is expected to be 33½ cents an hour minimum but when it will go into effect remains to be seen. This means that the fall goods for 1940 will be the first to feel the effects of the increase. There is apt to be for this reason activity in the coming weeks by buyers who will want to take in fall goods for next year as soon as knitters can start on such work. Even though knitters were previously meeting price resistance cotton yarns in combed qualities have advanced again this month due to advances in staple cotton.

FORECAST

(Opinion submitted by COTTON'S market correspondent.)

Philadelphia, December 16, 1939

Business has been better than sentiment the last month. In textiles, as well as in most other lines of business, new orders have been withheld and manufacturers have been content to draw upon old raw material or yarn orders rather than place new. This has resulted in a substantial drop in the backlogs of spinners and thereby places the entire situation on a much sounder basis than if the excited ahead coverage of September and the first half of October had continued without interruption.

As is usual the last month of any year, activity among textile plants has tapered off but the decline has been much less marked than in other Decembers and some plants, such as cotton spinners and rayon producers, will work through to the end, with any decline in takings to be used as the basis for producers to build up stocks that in instances have been cleaned out.

Under such conditions it is not logical to look for any prolonged decline in business nor for any great drop in prices of the textile fibers in the coming months. In fact, there are indications the last week or ten days that any slight easing in textiles has reached its limit and that stronger prices are not far ahead. Cotton has been strong and is a cent higher than a month back; silk has reached a new top not only for this year but for fourteen with signs it will go even higher early next year due to lack of adequate supplies. Wool had been easy but recently has been leveling out and showing minor advances.

With retail sales showing increases compared with last year and inventories not excessive, with prices steady or strong there is no basis for predicting dire things the first quarter of next year so that if quietness does prevail we do not feel it will last nor that it will be extensive. It is also possible that the letdown in new orders during the last two months of 1939 may be as long as buyers can wait and that a fair volume of new business in worsted, cotton, rayon and silk yarns will come through in the next few weeks for the first three months of 1940.

Export inquiries have been coming through at a more lively rate in textiles and in yarns so that many feel if there is any letdown in domestic demand for the early part of next year then the export end would more than offset it. This is based on a continuation of the war for the next few months at least because peace, as stated previously, would mean new conditions and in likelihood a decline in activity and in prices for a time due to depreciated currencies in many war countries and also to lower commodity prices abroad than here.

The outlook for the near term is for fair to good business but with activity on a far less exciting basis than September and October with any early 1940 letdown to be of relatively short duration.

Circuit Court Upsets Apex Hosiery Decision

The United States Circuit Court of Appeals on November 29 set aside a verdict which ordered the American Federation of Hosiery Workers, Branch No. 1 and its president, William M. Leader to pay $711,932.65 in triple damages to the Apex Hosiery Co. for damages to its plant during a sit-down strike beginning May, 1936. In overruling the decision of the lower court the Circuit Court, in a unanimous decision, held that the union had not interfered with interstate commerce during its seven-weeks possession of the plant and it therefore could not be assessed damages under the Clayton or Sherman anti-trust laws. But the union did not come out of the case unscathed, the Appellate Court opinion severely criticizing the sit down strategy and also struck at Philadelphia authorities for allowing the plant to be damaged without interfering.

The opinion, while throwing out the verdict on the ground that the Federal anti-trust laws were not violated, pointed out that "We entertain no doubt but that the appellant (the union) should be compelled in the appropriate forum to answer in damages to the appellee (the company)." Sylvan Hirsh, company counsel, said the decision will be appealed to the United States Supreme Court while Leader hailed the outcome as a "signal victory for organized labor" and declared "labor no longer can be threatened with extinction because it engages in strike activities." Judge John Biggs wrote the decision, which was concurred in by Judges Albert B. Maris, and William Clark, all of whom were recently appointed by President Roosevelt. The Circuit Court opinion said in part: "The evidence in the case at bar with the possible exception of the instance of the refusal of the appellant to permit finished goods to be shipped did not disclose an intent on the part of the appellant to restrain commerce.

"On the contrary, their intent was to unionize the plant, an action local in motive and local in effect. The effect upon interstate commerce was merely indirect, incidental and remote. The appellants, therefore, were not guilty of engaging in a combination of conspiracy to restrain commerce." At another point in the decision it was stated by the court that the evidence in the case supports but one conclusion, namely that the interruption to commerce by the stoppage of manufacturing operations was comparatively slight and indirect and the purpose of the union at the time of the formation of their conspiracy therefore was to unionize the Apex plant and not to restrain commerce. The lower court verdict against the union was returned last April 3 by a jury in the United States District Court. The company still has a suit for $1,171,000, damages pending in the Chester County Court against the County of Philadelphia for failure to quell disorders during the strike.

Criticizes Union Card Data at Rosedale

Counsel for the Rosedale Employees Association attacking evidence upon which a trial examiner based his recent recommendation that the National Labor Relations Board should dismiss the organization's complaint against the Rosedale Knitting Co., Reading, Pa., charged on November 30 that purported membership cards of the hosiery union were not introduced in evidence at the recent hearing and cannot therefore be considered by the board. The attorney, William M. Rutter, asserted in a brief filed with the National Labor Relations Board in Washington that Branch No. 10 of the American Federation of Hosiery Workers "could just as well have copied a list of names out of a telephone directory, brought them into the hearing and presented them as evidence of its membership." Mr. Rutter asked the board to set aside the intermediate report of the examiner and to declare the pact between the union and the company illegal and void. The case started when the employees' association complained of unfair labor practices by Rosedale, alleging discrimination through a contract between the hosiery company and the American Federation of Hosiery Workers. "This evidence consisted of a series of cards with typewritten names on them. These cards bore no signatures. They were not checked against the payroll of the company," said Mr. Rutter.

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Nylon Yarn Production Starts at New Plant

Manufacture of Nylon in the first unit of the new plant at Seaford, Del. began December 15, according to an announcement made by the DU Pont Company. Production of this new yarn, scheduled originally for early 1940, was advanced several weeks due to the project being completed earlier than was anticipated when the construction work started January 20, 1939. Operations will proceed gradually gaining speed as experience develops with equipment and personnel. A single spinning machine was started and the product minutely observed and proved satisfactory before other machines were put into operation. Capacity levels probably will not be reached for several months. The original unit is a single building, 1,052 feet long 272 feet wide. Opening of the plant climaxes a ten year research program. Nylon fibers for textile uses such as will be manufactured at Seaford are wholly man-made and have no counterpart in nature. One of the most promising uses is in hosiery. Other textile applications such as knit goods, underwear and woven dress goods are the subjects of experimentation. The Nylon process is begun in the DU Pont plant at Belle, W. Va., which has been enlarged in the last year and the intermediates made at Belle will be shipped to Seaford. The latter plant is on the outskirts of the town comprising several hundred acres.

Looking forward to the introduction of Nylon hosiery early next year manufacturers are beginning to discuss merchandising problems in connection with this development. The general expectation is that DU Pont will choose April as the time for the first promotion of full-fashioned knit goods. By that time a sufficient stock for preliminary merchandising will have been knitted, according to opinion in the trade. In order that no manufacturer or retailer may get the jump on another it is reported that the yarn producer is planning to see that the first deliveries are made simultaneously from mills to the stores by telegraph messengers. Most of the production problems in Nylon yarn have now been eliminated. Boarding equipment has been perfected and finishes adapted to the new yarn have been developed. There remains a few minor obstacles which will be overcome in the next month or two. It is stated that hosiery made of Nylon yarn will dry extremely rapidly and much faster than silk, cotton, rayon or woolen stockings.

Brochure Describing Features of New Reading Machine

An attractive and informative brochure, well illustrated, has been prepared by the Textile Machine Works, Reading, Pa., descriptive of the new high-production full-fashioned knitting machine. Facts concerning quality, production, maintenance cost, and construction are given. Illustrations and descriptive matter are included pertaining to the various mechanical motions of the machine.

Silk Substitutes Create a Problem

More than a year ago the Federal Trade Commission issued rules calling for the disclosure of the material content of hosiery containing silk and it is more than two years since the commission ordered a disclosure of rayon content in stockings. Yet, according to reports, there are some in the trade who risk action by the FTC by ignoring these trade practice rules. Now that more of the full-fashioned hose manufacturers who previously confined their lines to silk exclusively have begun to make goods with rayon welts as a means of reducing costs, the problem becomes one that is expected to create attention. Until now the full-fashioned industry has had little interest in the labeling rule, the problem effecting mostly makers and distributors of men's and children's goods where mixtures have always been used. A few manufacturers who lately introduced rayon welts are marking on the sole of the stocking: "Pure silk leg—rayon welt—lisle sole."

Some selling houses are reported planning to offer part rayon stockings without any disclosure in the stamping of the goods themselves of their rayon content. Reports are heard that a company here and there will introduce part rayon stockings marked simply "No. 400 Crepe", or something of the sort. Such procedure would be a violation of Rule 6 of the trade practice rules for the rayon industry promulgated October 26, 1937, by the Federal Trade Commission. This rule, which is mandatory, reads in part as follows: "In the case of yarn, thread, strands or fabric composed of a mixture of rayon and other kinds of fibre or substances (other than necessary dyeing and finishing materials) full and non-deceptive disclosure of the rayon and other content of such product should be made; and it is an unfair trade practice to conceal or fail or refuse to make such disclosure of, the presence of any constituent of such product, having the capacity, tendency or effect of misleading or deceiving purchasers or the consuming public. Such disclosure of the fibre content of said products pursuant to this rule shall be made by accurately designating and naming each constituent fibre thereof in order of its predominance by weight beginning with the largest single constituent; . . ."

A similar provision is contained in the trade practice rules for the silk industry made effective November 4, 1938, by the Federal Trade Commission. Both the silk and rayon rules were drawn up primarily with the weaving trades in mind but they apply also to the knitting trades including hosiery. Because proposed trade practice rules for the hosiery industry have not yet been promulgated by the Federal Trade Commission some of the hosiery trade have gained the impression that there are no regulations in force covering the marking of mixed goods in hosiery but the foregoing quotation from the rules would indicate that this impression is incorrect.

Aerial view of the new Nylon yarn plant of the Du Pont Company, just outside of Seaford, Del. The building is one-fifth of a mile long. The powerhouse is nearest the river. At the left is an administrative office building.

Heavy Output of Elastic-Top Hose

One out of every seven pairs of full length seamless half-hose and nearly every other pair of men's slack socks are now being manufactured with elastic tops. In a survey made by the National Association of Hosiery Manufacturers, it was found nearly 50 per cent of the slacks had elastic tops. When such tops were first brought out in half-hose several years ago there was general criticism that the tops satisfied only a small percentage of men. As a result the novelty of socks that required no garters remained for a year or more as that and nothing more and the small percentage of wearers began to return back to half-hose without elastic tops. Later in keeping with the rapid strides by makers of lastex and other rubberized yarns the half-hose field again studied the possibilities of expanding the market for these socks. From the anklet end of the business, especially in the production of children's and infants' lines, came the news of definite improvement in elastic yarns that finally resulted in tops that could be knit to fit a large proportion of consumers. Even though the elastic top end of the business has grown so widely it is conceded that a large percentage of prospective wearers of elastic top half-hose is as yet scarcely aware that such merchandise has been perfected and that it can be obtained at prices in line with the old type. For this reason it is believed that there is a ripe field for promotion of this type goods by manufacturers.

Imports of Cheap Chinese Hose Gain

Imports of hosiery from China, which have been increasing in an unusual way for several months, reached an all-time high in October. In the first seven months of this year there were imports from China of 78,494 dozens against 3,300 dozens for the same period a year previous. In commenting on this the National Association of Hosiery Manufacturers says it may be explained in part by the sharp drop in Chinese exchange. It was stated that at the recent low rate of exchange the average declared value of Chinese cotton hosiery coming here amounted to only 12½ cents a dozen pairs at the port of entry.

The average for the similar cotton hosiery from Japan is 28 cents. Under the old rate of exchange the value of the Chinese hosiery would be about 27 cents. Hosiery of this kind entering

Nylon yarn being processed. Here machines twist the bundle of slender filaments for ease in handling. "Yarn" is composed of numbers of these fibers twisted together into a single thread.

the country at the unheard-of figure of 12½ cents a dozen even with the duty added makes a price that hardly can be comprehended in domestic manufacturing circles. It is a new competition that the industry here cannot pretend to meet with costs of manufacturing going up all the time. Japan has been the chief source of competition but for several years past has been a declining factor, partly through the operation of the quota agreement between the two countries initiated by the National Association of Hosiery Manufacturers here and the Japanese hosiery export organization.

This limited exports of cheap hosiery from Japan to 1,500,000 dozens for three years, 1937, 1938, 1939. In the hosiery trade that has been following the unusual increase in the imports of cheap goods, with the recent sharp gains from China, there has been a feeling that perhaps the merchandise from that country really represented hosiery made by Japan through its control of the industry in parts of China. The Shanghai section of China is understood to be the center of the hosiery manufacturing that the country was doing prior to the beginning of the war with Japan. It is assumed that since Japan now dominates so thoroughly that section the hosiery industry may have been taken over and operated by the Japanese.

Hand Outerwear Must Repay $250,000

The Wage and Hour Division of the Department of Labor announced that eleven of the largest firms engaged in the manufacturing and selling of knitted outerwear garments will make restitution in excess of $250,000 under a court decree filed in the Federal Court in the Southern District of New York. Within the next four months this sum will be paid as back wages to nearly 10,000 home workers under the Fair-Labor Standards Act.

The decision was the result of several months of intensive investigation by inspectors of the Wage and Hour Division. It permanently restrains the firms and the Hand Knitcraft Institute of which they are all members from ever violating again directly or by subterfuge any of the provisions of the wage and hour law. The defendants in the suit were given as Hand Knitwear Institute, Regal Knitting Co., The May Knitting Company, Blue Bird Knitting Co., Fay Infants Wear, Inc.,Cupid Knitwear Co., Knitown Togs Inc., Famous Infants Knitwear Corp., Sternberg Knitting Co., all of New York; Morris Bernstein and Samuel Bernstein doing business as Infanta Sweater Mills, Philadelphia and Julius Berger of Newark, N. J.

Irving J. Levy, assistant general counsel, Wage and Hour Division, said the injunction consented to by the defendants is the most sweeping in its effect of any yet obtained and affecting eleven knitted outerwear manufacturers who constitute a substantial part of the children's and infants' knitted outerwear industry and whose operations extend throughout the eastern part of the country from Maine to Tennessee. In commenting on the formation of the institute named in the injunction the complaint stated, "The primary purpose in organizing the Institute was to establish for the defendant manufacturers a scheme for conducting operations whereby the said defendant manufacturers would make it appear that their home workers were no longer their employees but were instead independent producers or manufacturers."

New Underwear Wage Minimum

It is not possible at this time to state when the recommended minimum of 33½ cents an hour for the knit underwear industry will actually go into effect. In general, however, it is indicated for the early part of next year, perhaps by the middle of February. There will be a public hearing and the promulgation of the rate by the administrator who heretofore in similar cases has given notice of 30 days before effect. The nearness of the new minimum means that the fall 1940 underwear prices will be the first to reflect the full force of the new wage act. The current 30 cent statutory minimum, of course, will be ended but the forty-two-hour-per-week scale will continue as now. The event will be welcomed by the industry for one reason at least, that it at least will do away with the uncertainty of several

seasons past. Manufacturers will be able to set their goods prices with very definite ideas as to labor costs. On the whole the new 33½-cent-an-hour rate will unquestionably raise costs in the industry which must be passed on in higher prices because the margin of profit in the industry is not large enough to absorb the difference. The 1940 prices on heavyweights will, therefore, be sharply above those of a year ago.

Hosiery Union Head Named in Suit

Seeking damages of $250,000, libel action was filed November 26, in Common Pleas Court No. 3, Philadelphia, by the Rev. David C. Colony, rector of St. Luke's Episcopal Church in that city and head of several cooperative plants, against William M. Leader, president of Branch No. 1, American Federation of Hosiery Workers. The action, Mr. Colony said, is based on statements by Leader on November 6, 7 and 15. The rector is a defendant in a $100,000 damage suit instituted November 18 by Leader and other officers and members of the union after the Rev. Colony was reported to have said in a public address that the local "is in the hands of labor racketeers".

Price Problems Unsettle Hosiery

The hosiery industry in all its branches is experiencing at this time a period of difficulties and uncertainties with managements dealing with unusual production and marketing problems, Earl Constantine, president of the National Association of Hosiery Manufacturers, said. In view of this he made several suggestions. He said there is no better way to contribute to a sound and satisfactory price structure for the spring of 1940 than to curtail during this month and next. Next he called attention to the plant expansion of recent years and said that manufacturers must plan to restrict their production at those points on the calendar where the valleys of demand occur. He also called attention to the advance in silk and said hosiery buyers are familiar with the sharp advance in raw material markets and that they would understand increases in the prices of hosiery due to this but he added the responsibility of price adjustment rests on the manufacturer. He finally called attention to the new minimum of 32½ cents per hour in the seamless branch of the industry and said that this was another item that should be studied by manufacturers when making their new prices.

Medium Weight Underwear Registers Gains

The underwear industry has found a formula for bringing men and youths back to wearing moderately heavier underwear in the winter time. The increased success from season to season of the newer two-piece numbers of medium weight knit shirts and shorts is being followed with much satisfaction as it has the effect of dividing the seasons more naturally so far as mill production is concerned. Several years ago the manufacturer who brought out the knit brief short under a copyright name started the trend back to knit shorts. With this start it was but another step to carry the idea into winter garments which are made with slightly more weight and with certain numbers having a percentage of wool added. At the present time practically the whole industry has embarked in the making of what is known as medium-weights in shirts and shorts.

Checking on Supplies

EDITOR COTTON:

We do not always lose money in the production end of running a hosiery mill. Quite often we pay for supplies that we do not get. And I say this without reflecting on any of the people that sell to the mills, because on the whole I have found them to be a fair and honest lot.

However, anyone in shipping out goods is likely to make a mistake because we do so at our own plant occasionally, and it is an excellent idea to have one person check every purchased item that is bought by the mill.

As an example, back in the old days we ran only one type of needle. The packages were opened and used without anyone ever determining how many needles there were to the box. I began to count the needles in my boxes and often found them short as many as 16 needles per box. I might add that this concern does not furnish us or anyone else supplies now.

It is also a good idea to have some sort of record to determine if the supplies last as long as they should, and if not why not.

Again, we seemed to be getting onto the short end of some yarn purchases a few years ago, and on checking up we found that the scales of the shipper were out of balance. This was corrected when we brought it to his attention.

If shortages in supplies are called to the attention of the company shipping the parts, the company will gladly check into the matter and correct it. I am simply reminding the hosiery mills that such things can happen and do happen, and there is little sense in our paying for something that we don't get.

When our shipments of hosiery are short, you can bet your life that we are notified promptly. We appreciate being told about it too, and so will your supplier if you just let him know.

CONTRIBUTOR No. 6962

Single or Ply Yarn for Reinforcing

EDITOR COTTON:

We are considering the merits of using 1/50s and 1/60s mercerized cotton singles as against 2/100s and 2/120s doubled for reinforcing yarns. We feel that single ends may prove cheaper in manufacturing, provided that the wear is not affected.

Could you give us some idea of the pros and cons of using single fold as against two-fold mercerized cotton?

CONTRIBUTOR No. 6981

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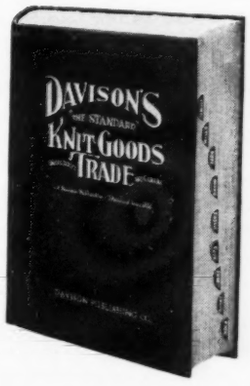

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TRENDS—YARN MARKETS

Silk and Cotton Yarns Continue Advance—Worsted Counts Steadier While Only Change Made in Rayon in Fine Sizes—Demand Begins to Expand for First Time Since War Boom —Deliveries on Old Contracts Maintained at Good Rate—Staple Cotton a Feature

Philadelphia, December 16, 1939

FEATURE of the yarn situation this month has been the sharp increase in silk. This commodity hit a new high of more than $4.00 within the last couple of days. This price compares with one of 60 cents lower a month back; it compares with a 1939 low of $1.82 hit in the first month of the year so that an idea of what hosiery manufacturers must face in the way of higher costs is seen. In cotton, the recent advance has created strength to yarns where they had been a little easier because of poor new dmand but now more buyers are beginning to operate for next spring. In wool, there was a drop but this has been followed by a December strengthening and the price level is about the same as a month back. Only price change in rayon this month has been in the finest sizes.

Cotton Yarns

The raw material market has been stronger over the last month than cotton yarn prices which is largely due to the lack of new business coming into the market over this period. At present the cotton market is approximately 1½ cents higher than a month ago and within the last few days had registered advances of more than two cents compared with a month back. In contrast with this, yarn prices in the carded section show no change while in combed qualities there is a decided firmness and the finer numbers have been increased approximately two cents which has been brought about by exceptional strength in the longer staples of cotton that have advanced in the month from 2 to 4 cents a pound. One reason for the advance in staple cotton has been the placing of an embargo on the export of Egyptian cotton to any other country than England and this is having an immediate affect upon yarns that are used in sewing and also in making full-fashioned stockings.

If this Egyptian embargo continues such operations as seaming in full-fashioned hosiery will have to be done with other type threads. The advance in staple cotton has hardened prices of all counts of combed yarns and underwear manufacturers that a month ago were refusing to pay 35 cents for 30s single have within the last week come in to the market paying up to 36 cents for deliveries extending through the first quarter of 1940. There has been no similar advance as yet in carded knitting yarns but this may develop within the next couple of weeks. Mercerized yarns have been affected by the strong situation in staple cotton and the higher prices that are being quoted on combed yarns so that within the next few days it is anticipated mercerizers will be compelled to advance their prices approximately 4 cents a pound.

At present the nominal price list on mercerized yarn is on the basis of 72 cents for 60s two-ply ungassed and it is expected that shortly this will be raised to 76 cents and even with this mercerizers assert that their margin will be smaller than they should operate on. Shipments on old contracts of combed and mercerized have been at an exceptionally active rate and knitters are unable to obtain all such yarns they want for nearby consumption. The delivery situation in single combed has been very strong and some of the leading spinners are not able to promise additional deliveries until March 1. Shipments of mercerized yarns have been averaging as much as 40 per cent ahead of this time a year ago and processors are turning out as much as they can, this being limited by the amounts of combed yarn that they can obtain.

Silk

There has been a series of sensational advances over the past four weeks in raw silk and the futures market yesterday hit the $4.00 per pound level for the first time since April 1930. The extent of the advance in this commodity may be seen from the following comparisons: current prices are 60 cents a pound higher than a month ago; the present $4.00 level compares with $1.82 the low for 1939 and with approximately $1.50 which was the low of 1938. Recent large consumption in both the United States and Japan coming at a time when reserve stocks have been greatly diminished has been the reason for this although traders here say that a considerable portion of the recent advance has been caused by Japanese speculation in this commodity. It has been estimated that American consumption up to the end of February will approximate 120,000 bales against which there are indicated about 82,000 bales, resulting in a reduction in stocks of about 38,000 bales.

Mill takings of raw silk in the United States during November showed a sharp drop to 32,241 bales from October consumption of 41,858 bales and 41,599 bales during November a year ago. The drop is seasonal and no appreciable increase in our consumption is anticipated until February or March. Raw silk arrivals during November showed a decline to 38,233 bales compared with 50,033 bales in the previous month. So far no actual steps have been taken in Japan to curb the large consumption there but recent meetings of various Japanese officials is indicative of the concern held in Japanese quarters lest a too rapid advance in prices should seriously curb the use of raw silk in the United States.

Rayon

The rayon yarn supply situation is embarrassingly tight for producers whose most serious problem is how to maintain friendly relations with customers whose demands they are unable to meet fully. The expected slackening in demand has failed to develop with the result that no company is in a position to supply customers with all the yarn they seek. The hosiery trade is particularly annoyed at its inability to obtain adequate yarn supplies, although present price levels for raw silk make it desirable for many manufacturers to cut costs by using rayon yarns of various types for welts and reinforcements and for plying with silk in the legs of volume full-fashioned numbers Neither cuprammonium nor viscose producers are in any position to accept much business from these new customers. Rayon consumption for this year is expected to break all records for this industry. Shipments for the first eleven months of this year total 325,300,000 pounds as compared with 247,900,000 pounds in the corresponding period last year which is an increase of 31 per cent. Producers stocks held at the end of November amounted to 7,500,000 pounds or about one week's supply. This figure compares with an already low stock figure of 9,400,000 pounds at the end of October.

Worsted Yarns

At present worsted yarn prices show little change compared with a month ago but this period was marked by a rather sharp decline late in November and the first week in December and followed by a rather sharp recovery within the last week. As an example 2-20s, 50s, which a month ago were quoted at 1.32½ to $1.35 declined to $1.25 with reports second-hand sellers have quoted even lower prices than that but during the last week following a general hardening in commodities and an improvement in sentiment prices snapped back to around $1.30 and with some asking up to $1.35 again. The advance has been solely due to a better feeling in the raw material market as demand from knitters has been very quiet, continuing a lack of interest that has been apparent since the middle of October. It is between seasons for outerwear manufacturers as they have not yet booked large orders in spring merchandise.

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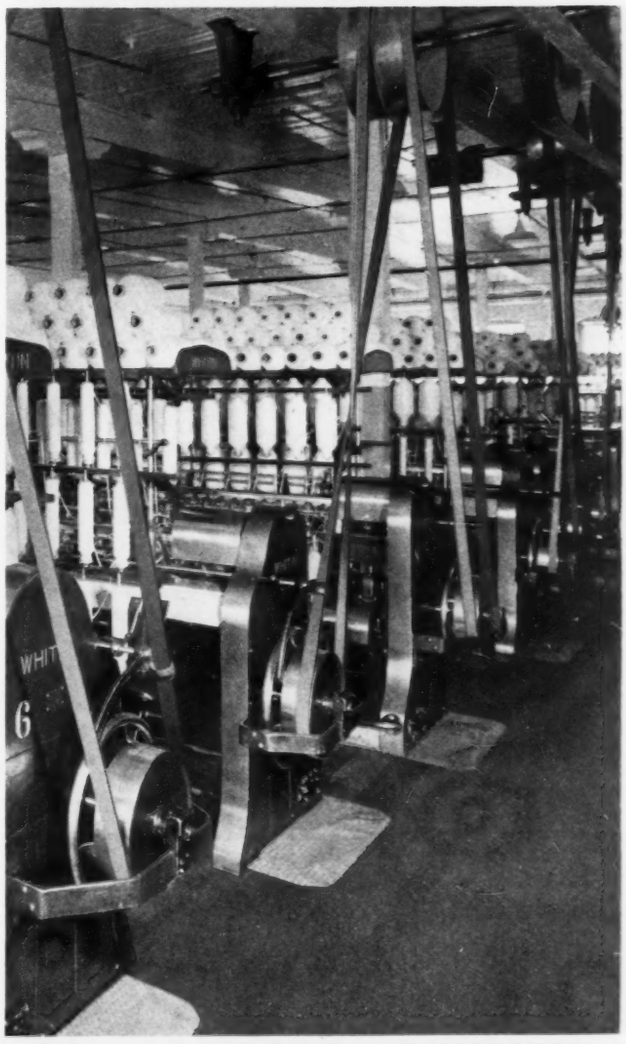

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If you are having the slightest spinning trouble, any of our representatives, who are men thoroughly experienced in this branch of the textile industry, are at your service at all times. A trial order will convince you of the superiority and durability of Dary Ring Travelers.

THE DARY RING TRAVELER CO., TAUNTON, MASS.

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You cannot get uniform yarn from worn, uneven diameter flutes.

Let us reneck your rolls, raise flutes back to original diameter with our patented method: U. S. Patent No. 1,887,510. This applies to all fluted rolls. All work guaranteed.

GASTONIA ROLLER, FLYER & SPINDLE CO.
GASTONIA, N. C.
Repairers also of Spindles and Flyers

DETEX
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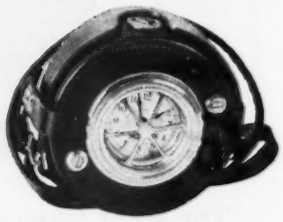

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NEW LOW PRICED "PRODUCTION LINE"—on the shelf—
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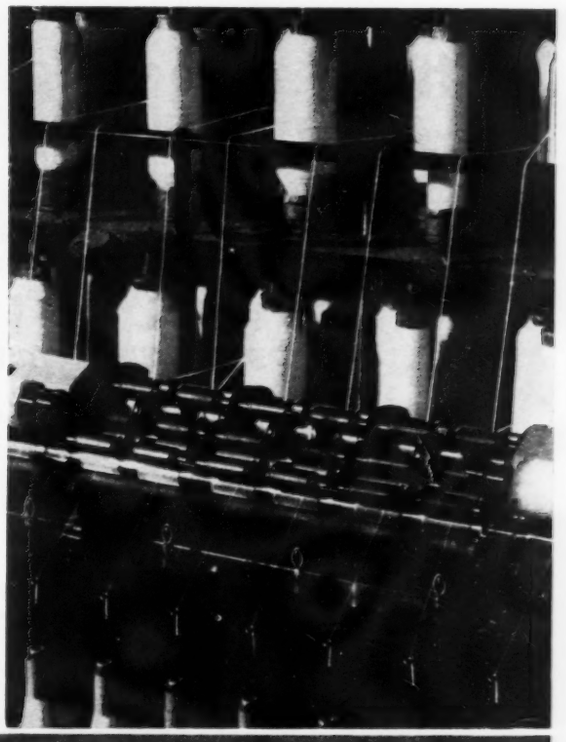
for

Quality Yarns at Lowered Costs

These well-felted, long-wearing fabrics, in combination with high-grade roller leathers, assure yarns of consistently high strength and uniformity. A trial of ALBANY Roller Cloths will prove their value to you.



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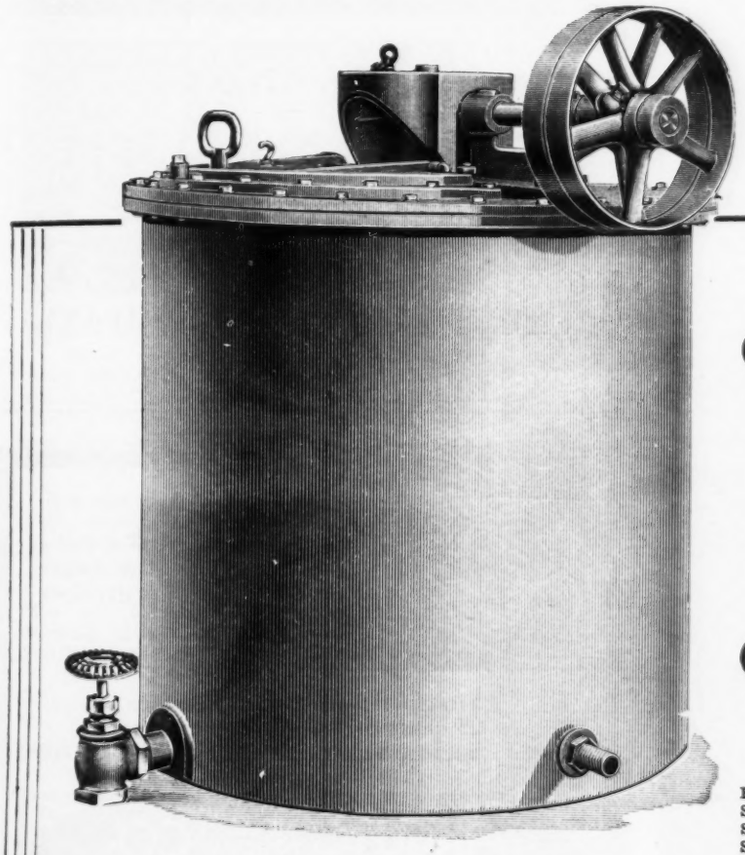

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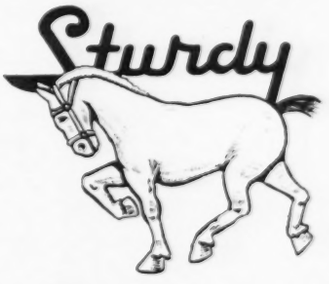

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Tested, improved, CAREFULLY DESIGNED under the direction of expert mill operators. Body cast solid from highest quality grey iron; all fixtures fitted with machined joints.

Furnished with single or double motion agitator, and with a variety of equipment for specific jobs. Write for detailed information.

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This is the Age OF SPEEDS and LONG DRAFT SPINNING

Ring Travelers of greater stability are necessary. Wentworth Double Duty, Wentworth Gravity and Gravity Express meet these requirements.

Duplex Twister Travelers — Berylian Finish Steel Travelers for Silk and Rayon

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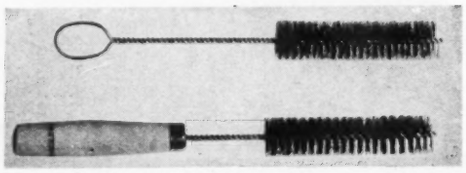

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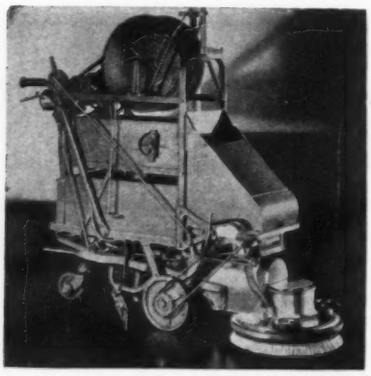

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MANUFACTURERS OF

TEXTILE MACHINERY PARTS

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Arguto NON-METALLIC

20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."
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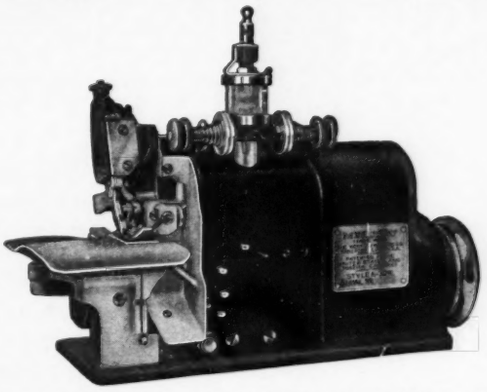
For Overseaming and Overedging with maximum efficiency at high speed and low operating cost modernize with the new

MERROW CLASS A MACHINES



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—200 VARIETIES FOR 200 PURPOSES—

Write for details and let us demonstrate these machines on your own fabrics.

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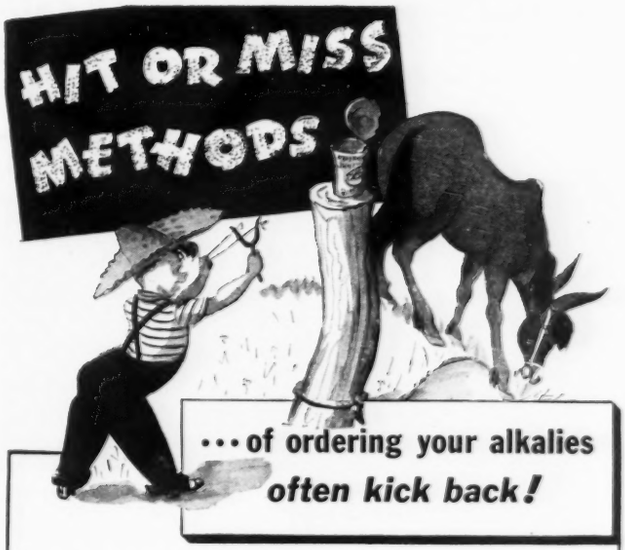

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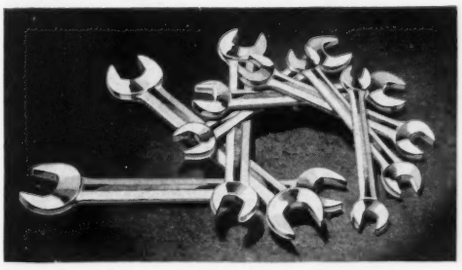

● Fiddling Fixing or Heavy Maintenance work . . . one's as easy to handle as the other when you use a Snap-on wrench for the job. These quality tools are built as carefully as the finest loom. Here are tools that *look right* and *feel right* because they are *designed right.*

Ask the Snap-on salesman to show you these wrenches—see how accurately they fit the bolt head—how balanced they feel—note how the small, thin heads can work in very close places—compare them with other tools you have used. Treat yourself to greater working satisfaction with a Snap-on Open End Wrench Set.

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WRITE FOR SPECIAL TEXTILE TOOL FOLDER

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● STANDARD AND SPECIAL WRENCHES AND HAND TOOLS

for

LOOM.....
SPINNING....
TWISTER.....
SPOOLER....
CARD ROOM FRAME.....
OPENING & PICKER....
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also

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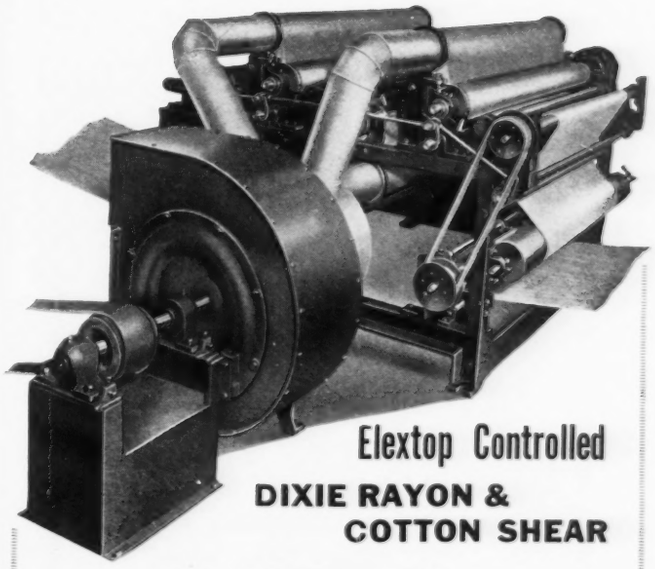
Snap-on Socket Wrenches — *The Choice of Better Mechanics* — **Blue-Point** Mechanic Tools



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DIXIE RAYON & COTTON SHEAR

HIGH SPEED STEEL KNIVES
DOUBLE ACTING SUCTION
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PERFECTED CLOTH CONTROL
BETTER TRIMMING AT HIGHER CLOTH SPEEDS
UNLIMITED BLADE LIFE WITHOUT GRINDING
NO OIL SWABS TO STAIN FABRICS
FREE TRIAL INSTALLATION

PARKS & WOOLSON MACHINE CO.

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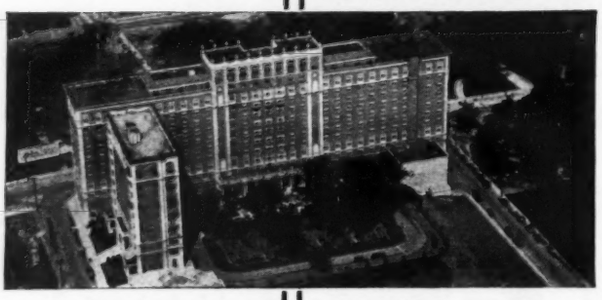
"The Most Looked-Up-to Address in ATLANTA"

For Hotel
COMFORT



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COMFORTABLY AIR-CONDITIONED
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South's Finest—One of America's Best
625 Outside Rooms
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Home of the famous
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Nationally Known Orchestras

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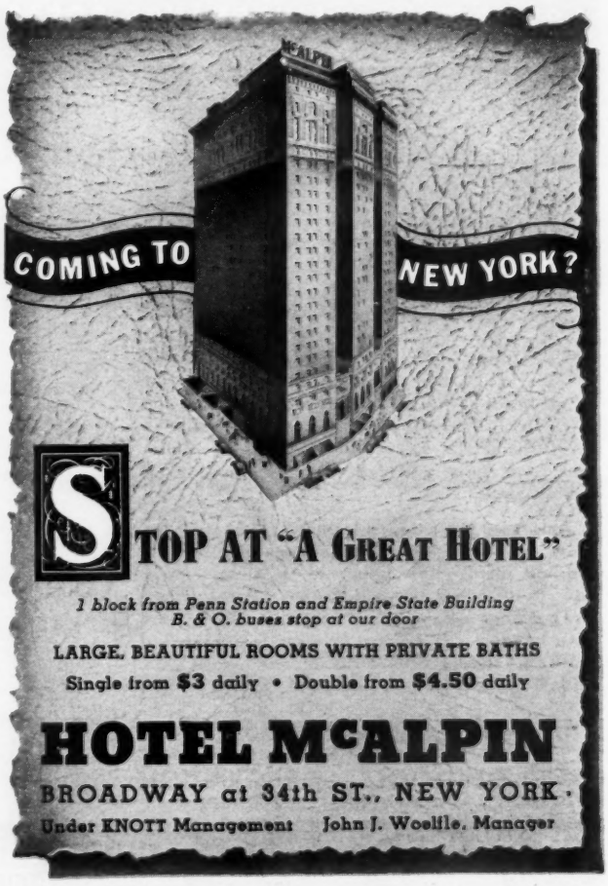
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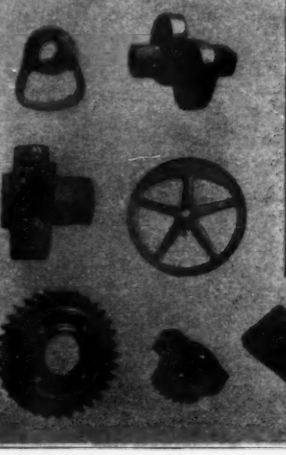
STOP AT "A GREAT HOTEL"
1 block from Penn Station and Empire State Building
B. & O. buses stop at our door
LARGE, BEAUTIFUL ROOMS WITH PRIVATE BATHS
Single from $3 daily • Double from $4.50 daily
HOTEL McALPIN
BROADWAY at 34th ST., NEW YORK
Under KNOTT Management John J. Woelfle, Manager

Henderson TEXTILE Repair Parts



THEY last longer because they are reinforced at the places where ordinary parts break.

They fit more accurately and operate more smoothly at higher speeds because they are made from precision patterns by expert workmen.

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"FUEL SAVINGS
alone have paid back the cost of our Powers control in less than 3 years"
"and it's helped improve the efficiency and health of our employees."

● Prevent OVER and UNDER-heating in your factory workrooms—offices and process rooms. Keep each room or department at the right temperature with Powers automatic temperature control • • • Powers control cuts heating costs 15 to 40%—Speeds-up production by increasing efficiency and output of workers—Helps to improve the quality of products affected by temperature or humidity. **Write for Bulletin 200.**

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Offices in 47 Cities—See your phone directory.

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POWERS TEMPERATURE AND HUMIDITY CONTROL

AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

Write us and let us quote you on anything from a postal card to a fully bound book.

The A. J. Showalter Co.

Printers and Publishers

Dalton **Georgia**

If You Would Have
BETTER FABRICS
With Rayon and Acetate Yarns
Standardize on Approved
HYDROXY SIZES
(Reg. U. S. Pat. Off.)

Uniform and dependable. Easily removed by the dyer. Prevent Shedding.

One of many high grade...

Kali PRODUCTS

Used by mills famous for the production of fine fabrics at competitive costs.

KALI MANUFACTURING CO.
MANUFACTURING CHEMISTS
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1—Kitson Feed Table, 16″ width, five 6′6″ sections.
1—Kitson 40″ two-beater Breaker Picker with high back Kitson 38″ Hopper Feeder.
1—Saco-Lowell No. 6 Condenser.
2—No. 7 Sturtevant Fans.
1—Saco-Lowell reversible Distributor, 2 gate.
2—Lowell Size Kettles, one 42x42 and one 36x36.
2—Heads Saco & Pettee Drawing, 4 del. per head, 12″ coilers, metallic top rolls.
3—No. 90 Universal Winders, late models, with slub catchers.
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10—sets Whitin Grinders for 40″ Cards.
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GEORGE F. LANGEVIN

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Former Member Examining Corps
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Foremen . . . Managers . . . Superintendents

Our system of searching out higher-bracket salaried positions, hiding your identity, increases your salary commensurate with training and experience. For valuable information, address Textile Dept.,

EXECUTIVE'S PROMOTION SERVICE,
300 B St., S.E., Washington, D. C.

SALESMAN WANTED

Individual with energy, experience and sales ability as chief salesman in newly developed Tufted Rug Department for a large textile company. Experience selling to both floor covering and/or linen departments of department stores desired. Product already has sold itself and orders coming in. Excellent opportunity on patented product—growing business. State all information that would be desired to properly appraise a man's work. Would have to locate at main factory in east, north of Baltimore. Reply Box 488, care of COTTON, Grant Bldg., Atlanta, Ga.

YARN MILL FOR SALE

One of the southern states, 10,000 spindles, 3,400 twisters, manufacturing yarns 8's to 24's, machinery comparatively new, total investment over $800,000. Can be bought for $250,000 including machinery, buildings, mill village, etc.

SOUTHERN BUSINESS BROKERS
Volunteer Bldg. Atlanta, Ga.

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Position as superintendent, assistant, or other key position by textile graduate with 18 years experience. Prefer colored fancy goods mill. Experienced in designing and creation of new fabrics as well as in manufacturing. Now employed. Detailed information and references on request. Address Box No. 485, care COTTON, Grant Bldg., Atlanta, Ga.

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We desire to purchase twelve 4 x 1, 67 to 72 inch reed spread, C 2 or C 4 C. & K. 25-harness dobbies. Send full details as to price, location, etc., to Box 489 care COTTON, Grant Bldg., Atlanta, Ga.

TEXTILE SECRETARY — STENOGRAPHER WANTS POSITION

Have had 12 years experience in secretarial and personnel work in southern textile mills. Now employed, but desire change. References furnished. Address Box 483, care COTTON, Grant Bldg., Atlanta, Ga.

Your Advertisement on This Page

will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,300 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Note the rates above and send in your advertisement today.

COTTON

Grant Bldg. ATLANTA, GA.

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"ATLAS BRAND"

EMERY FILLETING

"The New Flexible" "Needs No Damping"

Stocks in all the leading Mill Centres

TRADE MARK ATLAS

The Standard Card-Grinding Medium

GUARANTEED "A" QUALITY
THE ONLY QUALITY WE MAKE

Used the wide world over, like
The DRONSFIELD CARD-GRINDERS

Stocked by the
Principal
Mill Supply Houses
Sole Agents for
Dronsfield's Machinery
for U. S. A.:—
John Hetherington &
Sons, Inc.
72 Lincoln St.,
Boston, Mass.

Which of these rings mean money for YOU?

Whether you decide to replace worn rings with new rings of conventional style, or to utilize our new high-speed designs, you can realize a substantial return on your investment. Replacement of worn rings with new high-polish DIAMOND FINISH rings of the same type usually gives 10% to 12% production increase. Installation of our Eadie Oil-lubricated and Multiple-groove greased rings has made production increases up to 85% on cotton, rayon and silk twisting, as well as on wool spinning.

WE MAKE ALL TYPES OF RING HOLDERS

WHITINSVILLE (MASS.)

SPINNING DIAMOND FINISH **RING CO.**

Makers of Spinning and Twister Rings since 1873

Southern Representative: H. ROSS BROCK, Lafayette, Georgia
Mid-West Representative: ALBERT R. BREEN, 80 E. Jackson Blvd., Chicago

"The Roving Frame"

by Fay H. Martin

Every carder, frame fixer, section man, and superintendent will find "The Roving Frame," by Fay H. Martin, an instructive pamphlet. Mr. Martin, who has long written articles for "Cotton," clearly interprets draft, twist, lay, tension, pressure of the presser, hyperbola curve, the winding of the bobbin, reverse twist on the roving frame, roving frame cones, tensions and compounds so that the student or practical man will profit by his explanations.

This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Cotton," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin is a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. Price per copy $1.00 (or it may be secured in conjunction with a 3-year subscription to "Cotton" for $2.50 (Canada $4.00—Foreign $5.50).

COTTON

Grant Building, Atlanta, Ga.

BOSSON & LANE, INC.

Manufacturing Chemists
Established Jan. 1, 1895

Works and Office, Atlantic, Mass.

HIGH GRADE CASTOR OIL PRODUCTS
Sulphonated-Saponified

Soluble Oils — Para Soap Oil
Turkey Red Oil — Castor Soap Oil
Soluble Pine Oil — B & L Bleaching Oil

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BINDOL - ALPHASOL

Bleach Softener CSO,
Finishing Sizings and Softeners

VICTROLYN,

the economical assistant in warp sizing.
Penetrating, Lubricating and Wholly Efficient.

B & L BLEACHERS' BLUINGS AND VIOLET TINTS

GOOD MONEY VALUES--FREEDOM FROM WORRY

Southern Representative:
J. Frank Richardson, Jr., Tryon, N. C.

Index of ADVERTISERS

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A

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Albany Felt Co. 127
Aldrich Machine Works 14
Allis-Chalmers Mfg. Co. 37
Aluminum Co. of America 16
American Aniline Products, Inc. *
American Magnesium Corp. ... 8
American Moistening Co. 126
American Monorail Co. 38
American Pulley Co. ..... *
American Yarn & Processing Co. 99
Arguto Oilless Bearing Co. ...128
Armour & Co. ..... *
Armstrong Cork Co. 71
Arnold-Hoffman & Co., Inc. ... *
Ashworth Bros., Inc. ..... *
Associated Business Papers Inc. 124
Atlanta Envelope Co. 123
Atlas Electric Devices Co. ... *
Audit Bureau of Circulations.. 36

B

Barber-Colman Co. 81
Barkley Machine Works 128
Best Universal Lock Co. ..... *
Borne, Scrymser Co. 95
Bosson & Lane, Inc. 133
Bowen-Hunter Bobbin Co. ... *
Boyle Co., Inc., A. S. ..... *
Brinton Co., H. 123
Brown Instrument Co. ..... *
Bunting Brass & Bronze Co. .. 86
Butterworth & Sons Co., H. W. *

C

Cameron Machine Co. ..... *
Ciba Company 40
Classified Ads 132
Cleveland Tramrail Division ... *
Clinton Co. ..... *
Cole Mfg. Co., R. D. 123
Colgate-Palmolive-Peet Co. ..... *
Commercial Credit Co. 128
Commercial Factors Corp. .... *
Corn Products Sales Co. ..... *

D

Darnell Corp., Ltd. ..... *
Davison Publishing Co. 121
Dayton Rubber Mfg. Co. ..... *
Dary Ring Traveler Co. 126
Detergent Products Corp. .... *
Detex Watchclock Corp. 126
Diamond Alkali Co. ..... *
Dommerich & Co., L. F. ..... *
Drake Corp. .....Front Cover
Draper Corporation 1
Dronsfield Bros., Ltd. 133
Du Pont de Nemours & Co., Dyestuffs Division ..... *
Du Pont de Nemours & Co., Inc., E. I., Fine Chemicals Division ..... *
Du Pont de Nemours & Co., Inc., Finishes Division .... *
Du Pont de Nemours & Co., Inc., E. I., R. & H. Chemicals Dept. ..... *

E

Eaton, Paul B. 132
Executive's Promotion Service.132

F

Fafnir Bearing Co. 28
Fidelity Machine Co. ..... *
Finnell System Inc. 128
Foster Machine Co. ..... *
Foxboro Co. ..... *
Franklin Process Co. ..... *

G

Gastonia Brush Co. 128
Gastonia Roller Flyer & Spindle Co. 126
Gates Rubber Co. ..... *
Gaylord Container Corp. ..... *
General Coal Co. ..... *
General Dyestuffs Corp. 19
General Electric Co., Lamps... 32
General Electric Co., Motors.. ..... 20 and 21
Goldens Foundry & Mch. Co..127
Goodyear Tire & Rubber Co... 4
Grinnell Co., Inc. ..... *
Gulf Oil Corporation 12

H

H & B American Machine Co... *
Henderson Foundry & Mch. Works 131
Hetherington & Sons, Inc., John 133
Hotel Atlanta Biltmore 130
Hotel Columbus 95
Hotel McAlpin 130
Hotel Peabody 130
Hotel Philadelphian 130
Houghton & Co., E. F. 33
Howard Bros. Mfg. Co. 26
Hunter Machine Co., James ... 18
Hyatt Bearings Division 23

I

International Nickel Co., Inc... *

J

Johnson Bronze Co. 75
Johnson Corporation ..... *

K

Kali Mfg. Co. 131
Kaumagraph Co. 31
Keever Starch Co. 86

L

Lane & Bros., Inc., W. T. ... 93
Langevin, George F. 132
Laurel Soap Mfg. Co. 123
Lawlor Co., S. C. 77
Lola Mills, Inc. ..... *
Loper Co., Ralph E. 126
Lunkenheimer Co. ..... *

M

Manhattan Rubber Mfg. Co. Division ....Inside Front Cover
Maple Flooring Manufacturers Asso. 7
Marquette Metal Products Co... 6
Mathieson Alkali Works, Inc.. *
Meese, Inc. ..... *
Merrow Machine Co. 129

N

National Oil Products Co. .... *
National Ring Traveler Co. 128
National Starch Products, Inc.. 73
New York & New Jersey Lubricant Co. 79
North, Inc., Frank G. ..... *

O

Old Dominion Box Co. 123

P

Pabst Sales Company 93
Page Fence Association ..... *
Parks-Cramer Co. 79
Parks & Woolson Mch. Co. 129
Penick & Ford, Ltd., Inc. 95
Pennsylvania Salt Mfg. Co. ... *
Pittsburg Corning Corp. 29
Powers Regulator Co. 131
Proctor & Schwartz, Inc. .....91 and 115
Protective Life Insurance Co... 22
Provident Life & Accident Insurance Co. ..... *
Pure Oil Co. 134

R

Reeves Pulley Co. ..... *
Reliance Electric & Eng'g Co.. *
Republic Rubber Division 15
Republic Steel Corp. 42
Rhoads & Sons, J. E. 125
Ridge Tool Co. ..... *
Robert & Company ..... *
Rochester Eng'g & Centrifugal Corp. ..... *
Rockwood Mfg. Co. ..... *
Rohm & Haas Co. ..... *
Royce Chemical Co....Back Cover

S

S. K. F. Industries, Inc. 17
Saco-Lowell Shops 9
Sandoz Chemical Co. ..... *
Scholler Bros., Inc. 121
Scott & Williams, Inc. 100
Selig Company 77
Seydel Woolley & Co. ..... *
Shell Oil Co., Inc. ..... *
Showalter Printing Co., A. J...131
Sirrine & Co., J. E. 128
Snap-On Tools Corp. 129
Socony-Vacuum Oil Co., Inc... .....34 and 35
Solvay Sales Corp. 129
Sonoco Products Co. 82
Southern Business Brokers ...132
Staley Mfg. Co., A. E. ..... *
Standard-Coosa Thatcher Co... *
Standard Oil Co., Inc., of Kentucky 27
Standard Pressed Steel Co. ... 30
Standard Silicate Division .... *
Steel Heddle Mfg. Co. 25
Stein, Hall & Co., Inc. ..... *
Stodghill & Co., Inc. ..... *
Sturtevant Co., B. F. ..... *

T

Taylor Instrument Companies. 24
Tennessee Eastman Corp. .... *
Terrell Machine Co. 91
Texas Co. 2
Textile Finishing Machinery Co. ..... *
Textile Machine Works ....104 and 105
Three-In-One Oil ..... *
Torrington Co. .....109 and 110
Trust Company of Georgia ... 69

U

Union Special Machine Co. ... *
Universal Winding Co. ..... *
U S Bobbin & Shuttle Co. ... *
U. S. Ring Traveler Co. 125
U. S. Testing Co., Inc. 77

V

Vacuum Cup Metal Pulley Co..126
Veeder-Root, Inc. ..... *
Victoria Paper Mills Co. ..... *

W

Wallerstein Co., Inc. 126
Want Ads 182
Warner Chemical Co. 3
Warwick Chemical Co. ..... *
Westinghouse Electric & Mfg. Co. 13
West Point Foundry & Mch. Co. .....Inside Back Cover
Whitin Machine Works 5
Whitinsville Spinning Ring Co..133
Wildman Mfg. Co. 113
Willcox & Gibbs Sewing Mch. Co. 117
Wolf & Co., Jacques 10

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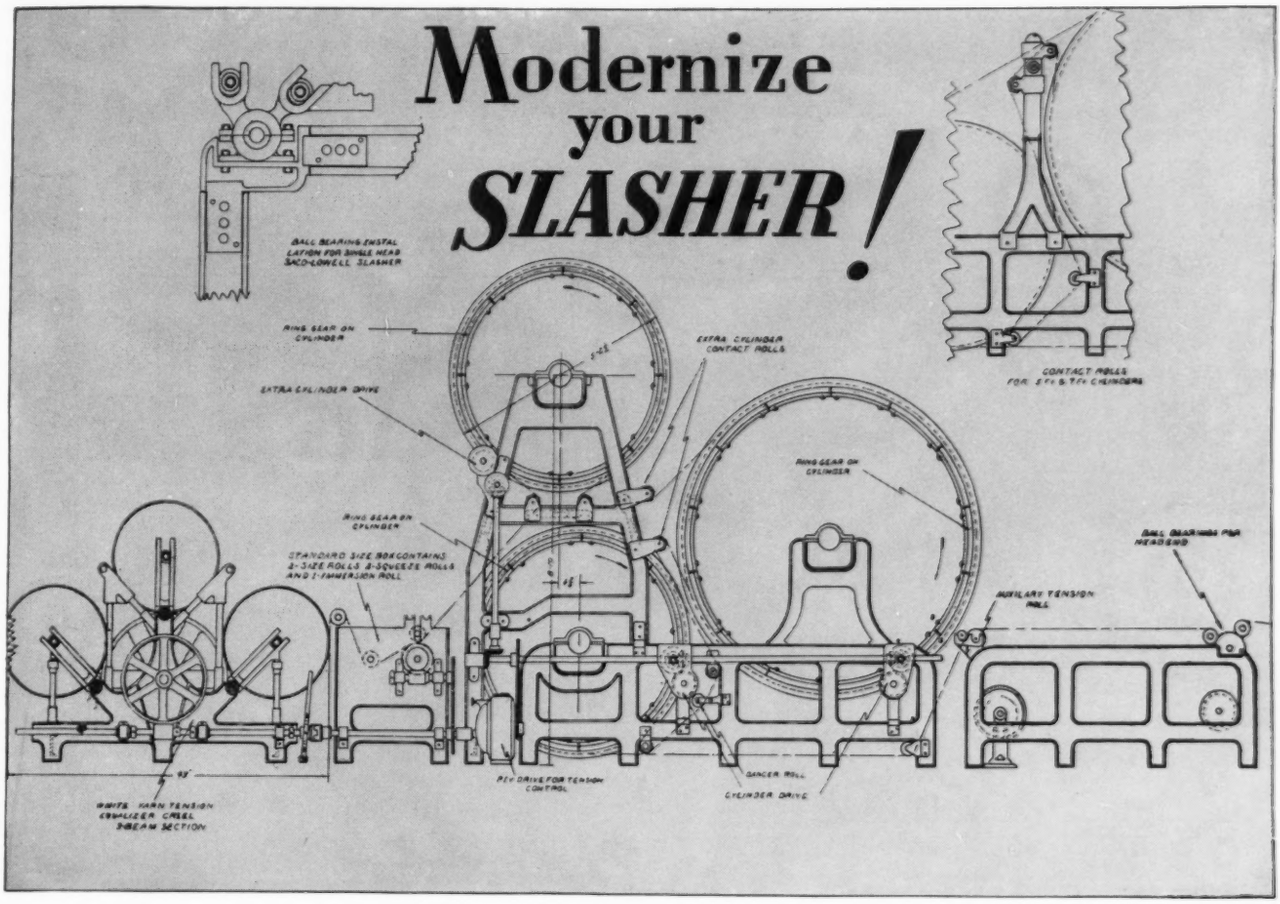
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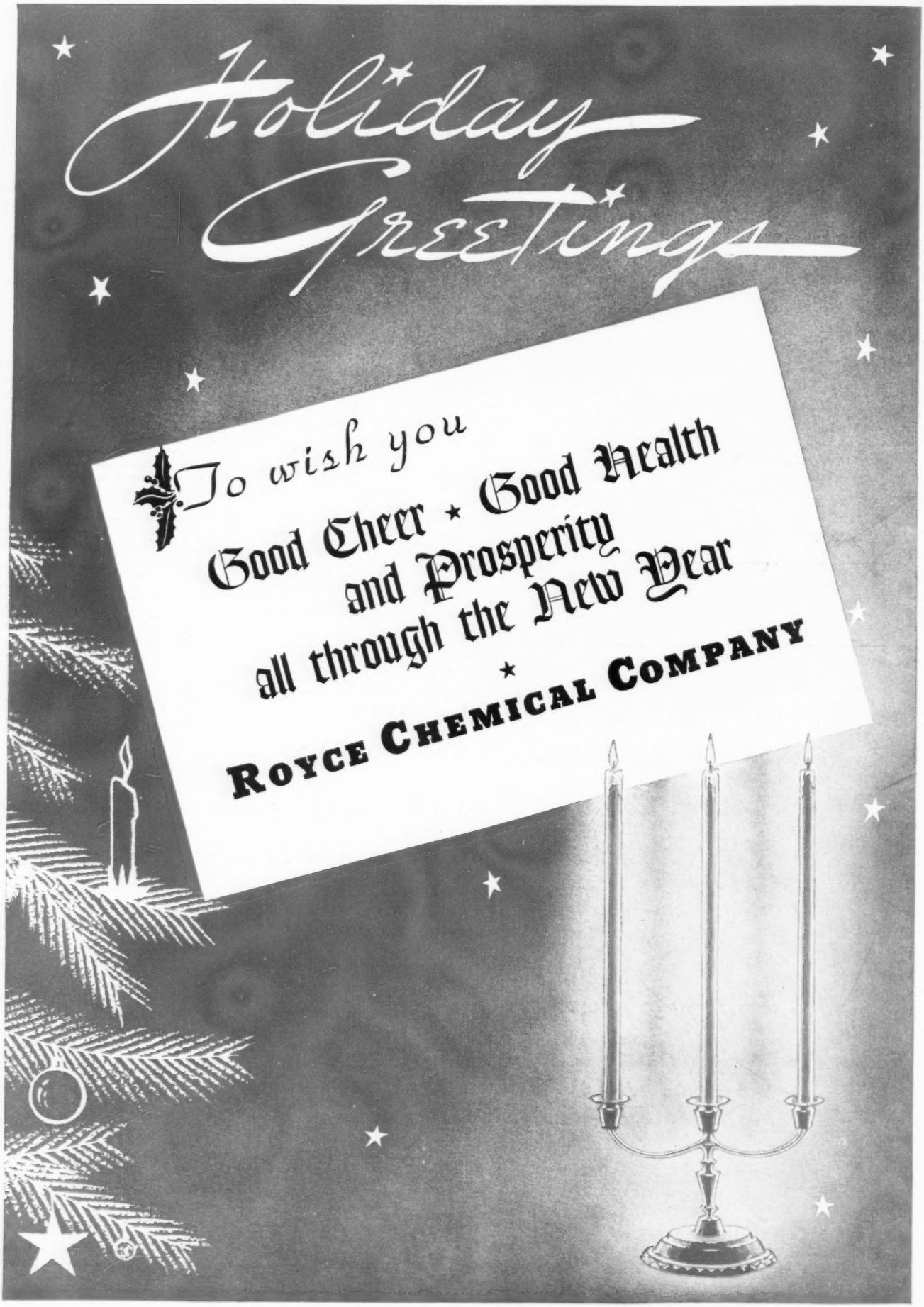
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